RAILROAD GAZETTE

FRIDAY, JUNE 18, 1880.

Contributions.

Sandberg's Standard Rail Sections.

No. 19 GREAT GEORGE STREET, Westminster, S. W.

TO THE EDITOR OF THE RAILROAD GAZETTE:

SIR: The question of standard rail sections has been long enough studied with the aim to unite the interests of both consumers and producers of rails. With this view in mind and as a rail inspector, I designed and published in 1870, a series of standard rail sections, of which the two weighing 50 and 56 lbs. per yard [figs. 1 and 2*], were very largely adopted for American railways. They are equally broad in the base as the height and were made in iron.

When steel came into use for rails, I was called upon to design such for steel rails, and published a new series of standard rail sections in 1878. These are higher than the width of the base, the web and the flange being somewhat thinner, owing to the greater facility in rolling steel than iron. Of this the 50 and 56 lbs. sections have also been largely adopted in America. In fact, since the revival of the American rail trade in this country, there are hardly any other sections asked for, and makers are deriving great benefit in being relieved from the numerous sections which, beside the cost of rolls for each one, cause great delay in executing orders.

Unhappily, however, the publication of the two sets of sections, the new and the old, sometimes causes a confusion; and in order to explain and avoid such, I have often been called upon to give a consultation, but have thought it more efficient to explain matters through your widely-circulated paper to the railway engineers as well as the rail-makers.

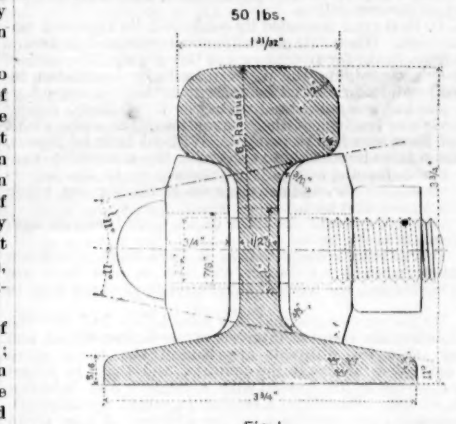

Fig. 1.

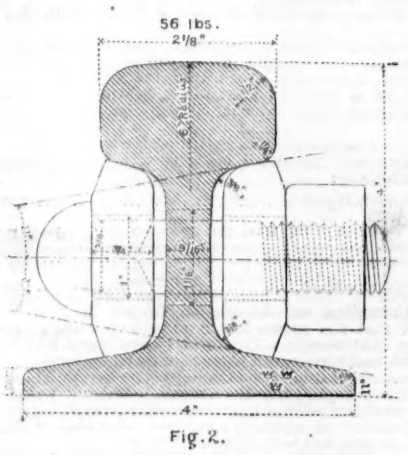

Fig. 2.

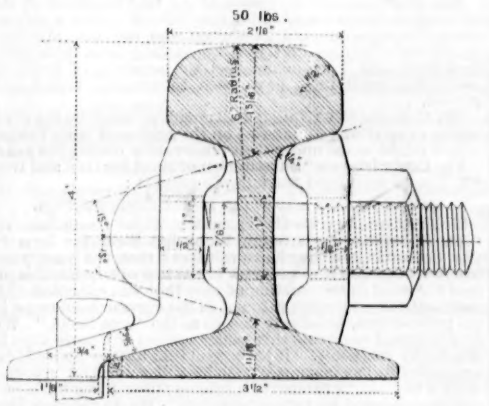

Fig. 3.

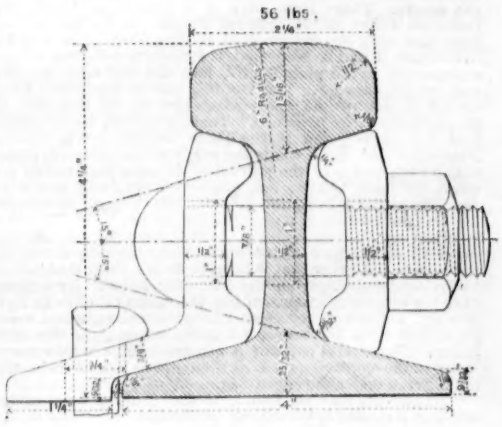

Fig. 4.

SANDBERG'S RAIL SECTIONS.

As drawings have been widely circulated since they were published, it would now suffice to point out the difference, so as to distinguish the old from the new. This can be done in two ways; first, by calling them the new and the old, or by the year of publication, 1870 or 1878 respectively, or by dimensions of height of rail or width of flange for the respective weights, 50 or 56 lbs. per yard. To call them by iron or steel would be less efficient, inasmuch as the old sections formerly made in iron are now made in steel for maintenance and renewals of old roads, in order to keep the same fish-plates.

The benefit in the new ones, although more advantageous in constructing new lines, is not so great as compared with the inconvenience of having two sections of fish-plates on the the same road.

The old sections having been down in America for eight or ten years, must certainly have proved good, as they are now so much asked for, and it is certainly very gratifying to find that the American railway engineers have united their requirements in adopting these sections, both new and old, and they will naturally derive the benefit in obtaining the rails cheaper and quicker than if every one should have his own section.

My object has thus been reached to a great extent. I have no pecuniary advantage in either the old or new sections being adopted, and unless I have the inspection intrusted to me, I could not be accountable for any correctness, neither as to section nor quality of the rails ostensibly made to the so-called Sandberg's section and specification.

Yours truly, C. P. SANDBERG.

* All the engravings of rail section are one-half the full size.

MASTER CAR-BUILDERS' ASSOCIATION.

Fourteenth Annual Convention.

The Fourteenth Annual Convention of the Master Car-Builders' Association met in Detroit, June 8, and was called to order by President Garey. Judge Chipman, of Detroit, made a very cordial address of welcome, to which appropriate response was made.

The following members answered to their names at roll call: Leander Garey, Wm. Johnson, C. E. Garey, R. Donaby, New York Central & Hudson River; J. N. Mileham, M. Wilder, New York, Lake Erie & Western; Enos Varney, Fitchburg; F. D. Adams, Boston & Albany; R. V. Coon, Troy & Boston; D. Hoit, U. H. Kohler, Wabash, St. Louis & Pacific; C. A. Smith, Union Tank Line; E. A. Olmstead, Long Island; J. H. F. Wiers, New York, Pennsylvania & Ohio; S. Griffith, Cincinnati, Indianapolis, St. Louis & Chicago; S. A. Davis, Boston & Lowell; J. W. Leighton, New Haven Car Co.; Wm. McWood, R. Barnett, Grand Trunk; John Kirby, Lake Shore & Michigan Southern; Thomas Aylesbury, Kansas City, St. Joseph & Council Bluffs; W. D. Hildrup, Harrisburg Car Co.; W. R. Davenport, Erie Car Works; W. H. Paige, Wason Manufacturing Co.; M. N. Forney, *Railroad Gazette*; B. K. Verbryck, Chicago, Rock Island & Pacific; John Ortton, E. E. Carver, Canada Southern; Robert Millar, H. H. Hewitt, Michigan Central; J. P. Coulter, Ohio & Mississippi; T. G. Gorman, Hannibal & St. Joseph; C. E. Gore, H. L. Cooper, Lake Erie & Western; R. C. Blackall, Delaware & Hudson Canal Co.; Thomas G. Dunn, K. Blackwell, Chicago & Grand Trunk; W. Campbell, Chicago & Northwestern; W. H. H. Allison, Cincinnati, Hamilton & Dayton; J. H. Raymond, Secretary Western Railroad Association; Sanford Keeler, Flint & Pere Marquette; J. G. Hubbard, Buffalo & Southwestern; J. West, Chicago, Burlington & Quincy; Joseph Stuker, Evansville & Terre Haute; M. P. Ford, Pittsburgh, Cincinnati & St. Louis; R. V. Davis, Nashua & Lowell; John R. Fletcher, National Car Co.; H. O. Wadlie, Illinois Central; L. S. Young, Cleveland, Columbus, Cincinnati & Indianapolis; E. B. Peabody, Illinois Midland.

One new member was added: Reuben McPherson, Flint & Pere Marquette.

President Garey then delivered his annual address, as follows:

PRESIDENT'S ADDRESS.

"GENTLEMEN OF THE ASSOCIATION: I am happy to again meet you in convention. The past year has demonstrated the capacity of our railroads to meet the most rapidly increasing demand for transportation ever witnessed in this country. The increase in quantity of the various products of the country, added to the imports moved by rail, has more than doubled during the past ten years, and we may reasonably expect that the railroads will be called upon (in a few years) to carry double the tonnage they are now prepared to move with the present rolling stock.

"There are times during each year, even with the present number of cars, that managers are bothered to find storage room for idle cars, while in busy times it is impossible to furnish the number required.

"The ordinary ten-ton car has been loaded with from twelve to fifteen tons, thus adding about one-half to the carrying capacity of freight cars, while most of the cars built during the past year have been designed to carry fifteen, and in some cases twenty tons each.

"It is evident from past experience that in a short time the maximum load for eight-wheel freight cars will be at least twenty tons, while four-wheel cars will be load with from ten to twelve tons each. Master car-builders should strive to anticipate rather than be forced to make the necessary changes in designs and construction of the various classes of cars for moving freight.

"I cannot let this opportunity pass without calling attention to the old subject, uniformity in cars for interchange traffic.

"The present time appears to be most appropriate for an earnest effort by all master car-builders to agree unanimously upon what shall constitute a standard box freight car, as the old ten-ton car will soon be of the past, while the car of the future will have a carrying capacity of at least twenty tons.

"Our experience during the past year has proven the value of a standard car axle, and your wisdom in making the size larger than those in general use; and if the standard axle had been more generally put in use, railroads would now be in better condition to increase the allowable tonnage of cars.

"I would call attention to the various lengths of gauges used for setting wheels for the same gauge of track, and ask, if possible, a standard length be established by which all can be governed.

"I have the pleasure to announce that your committee to prepare a dictionary of terms, have completed the duties assigned them, and are now ready to exhibit the result of their labor.

"The thirteen annual meetings of the Association have been of much benefit to the public. It has been thought that by a reorganization our meetings could be made more interesting."

The minutes of last meeting, as printed, were received without reading.

The following committees were appointed by the chair:

On Correspondence and Resolutions, Messrs. Ortton and Leighton.

On Annual Dues, Messrs. Miller and Mileham.

On Subjects, Messrs. Blackall, Forney, Davenport, Ford, Kirby and Adams.

The Committee on Preparing a Dictionary of Terms presented the following report:

REPORT ON CAR-BUILDERS' DICTIONARY.

TO THE MASTER CAR-BUILDERS' ASSOCIATION:

The Committee to whom was delegated the duty of compiling a "Dictionary of Terms," take great pleasure in reporting that they have at last completed their task, and a copy of the book is submitted herewith.

At the meeting held in 1878 your Committee reported that they had then collected 1,300 terms, and that "a dozen or more large drawings have been required and many smaller ones will be needed before the work is complete." At that time a blank form was also submitted, showing the size that the book was expected to be.

To show how much greater the work has been than was, even then, anticipated, it may be said that the number of pages in the volume before you is more than double that of the blank form submitted two years ago. The number of terms, instead of being 1,300, is between 2,400 and 2,500. There are 15 double-page engravings, over 70 which occupy a full page, and over 800 engravings altogether.

The cost of the book has thus been nearly double what was estimated, and the majority of the Committee, who had no pecuniary interest in the matter, therefore felt justified in consenting that the retail price for the book should be fixed at $2, instead of $1.75 as was originally proposed by the publishers. They will, however, furnish it in orders of ten copies at the price originally named.

The committee do not expect that they will be able to convey to the members of this Association any adequate idea of the time consumed or the labor required in doing the work which you assigned to them. The following extract from the preface indicates, however, the amount of work required and also the general character and scope of the Dictionary:

"Early in the history of the Master Car-Builders' Association, this subject attracted attention, and in 1871 a committee was appointed to prepare a 'Dictionary of Terms used in Car-Building.' This committee originally consisted of eight or ten members, who held a number of meetings without accomplishing much, and it soon became apparent that it was too unwieldy to do the work which had been undertaken. It was finally narrowed down to those members whose names appear on the title-page of this book, who were courageous enough to undertake the task of completing the work, probably only because they were then quite ignorant of its magnitude.

"The first plan was to give, as far as possible, the names of all the parts of cars and their synonyms in use in different parts of the country. This, it was soon found, would make the book much larger, and the vocabulary much more cumbersome than seemed desirable, and, at the same time, would rather add to than diminish the existing confusion. The committee, therefore, resolved to confine its labors chiefly to selecting and assigning appropriate terms to those parts and objects which *are in common use*, and which pertain to railroad cars.

"It should be noticed, too, that to supply the want which demanded such a vocabulary, what might be called a double dictionary is needed. Thus, supposing that a car-builder in Chicago received an order for a *Journal-box*, by looking in an alphabetical list of words he could readily find that term and a description and definition of it. But, suppose he wanted himself to order such castings from the shop in Albany and did not know their name; it would be impracticable for him to commence at A and look through to Z, or until he found the proper term to designate that part. It was, therefore, necessary in a dictionary of this kind, to provide the most copious illustrations and arrange them in some systematic way, so that a person might find a representation of any part of a car he might have in mind and from that illustration find the name. The manner in which this want has been met is fully described in the 'Directions for using the Dictionary' which follow the preface.

"The system of cross-references employed in 'Knight's Mechanical Dictionary,' has also been adopted here. Thus, under the term *Axle*, there are references to '*Master car-builders' standard axle, muley axle, street-car axle*,' etc. Under the word *Bar* a list of various kinds of bars, such as, '*arch bar, guide bar, draw bar*,' etc., is given. This will often aid very materially in finding terms.

"Of the defects of the book, and its incompleteness, no one can be so well informed as the Committee who are are its sponsors. Several years' time would be too little to devote to the compilation of such a dictionary, if completeness were aimed at; and if more care could have been given to the preparation of the material in the book, it could have been confined within considerably smaller limits, but at the same time more thorough investigation would have increased the vocabulary very much in other directions. In fact, there is hardly any limit to the scope which such a book might cover. It was at one time intended to include the names of all the

different materials used in car-building, and a good deal of data was collected for that purpose; but it was found that to do so would involve more time and labor than the Committee could devote to it, and therefore that part of the work had to be omitted.

"Of the philological qualifications of the Committee for their work, it perhaps need only be said, to disarm criticism, that none of its members knows any other language than the one he inherited, and that very imperfectly. Two of them are practical car-builders, one of them in charge of the cars of one of the largest and most fully equipped roads in the country; and the compiler, during all the time that the book was in preparation, was actively engaged in editing a weekly technical paper. The only time any of the members of the Committee could give to the work was that which could be eked out from his other duties. They are therefore compelled to submit their work to the public, knowing its imperfections and how much it might be improved if the requisite labor could be devoted to it. They trust, however, it will prove useful in establishing a common language where now there is well nigh a Babel of confusion."

Great difficulty was encountered in devising a system of classification for the terms, and it is feared that in some cases persons who have not informed themselves of the plan upon which they are arranged may have some trouble in finding what they are in search of. To meet this difficulty what are considered very explicit "Directions for using the Dictionary" are printed at its beginning. To make this final report complete these directions are given herewith, and are as follows:

"DIRECTIONS FOR USING THE CAR-BUILDER'S DICTIONARY.

"When it is desired to find the meaning of a given word or term, refer to it in the alphabetical list printed on tinted paper, where a definition or explanation similar to those contained in ordinary dictionaries, and a reference to some engraving illustrating the object—if it is capable of such illustration—will usually be found.

"To find the name of a car or part of a car, let the reader examine a list of the different classes of engravings in the index which follows these directions, until he finds the class to which the object he is looking for belongs. By referring to the engravings included in that class he will usually find a representation of the object. If the engraving is of a single object its name will be found underneath, but if it consists of several or many parts these will each be numbered, and a list of the names of the parts, arranged consecutively by their numbers, is given at the beginning of the class to which the engraving belongs. If the list is not on the same page a running line over the engraving usually refers to the page on which it can be found.

"Thus, suppose a reader wants the name of the longitudinal timbers under the floor of a freight-car nearest the centre. These form part of a freight-car body. He therefore refers to 'Freight-car Bodies' in the index, and finds that they are represented in figs. 55–87. In looking over these, it will be seen that the timbers referred to are represented in the plan, fig. 57, and the end view, fig. 58, and are numbered 4. The running line on top reads, '*For list of names of the parts designated by the numbers in the engravings, see page* 216.' Turning to 216, he will learn that the name given to the parts numbered 4 is '*Centre Floor-timbers.*' If he wants the name of the piece of metal which rests on top of the journal of an axle and resists its wear, he finds 'Axles, Journal-boxes, etc.,' and refers to figs. 138 to 153. In figures 138 and 139 the part he is looking for is numbered 7, and in the list on page 278 its name is given as '*Journal-bearing.*' If the name of the attachment to car window-sashes for holding them up is sought, the reader will know that it belongs to the class designated 'Window-furnishings,' in the following index. By looking over the engravings representing this class of objects, figs. 308 and 309, which represent this attachment, would soon be found with its name, '*Window-latches,*' in the title below. The several parts of a window-latch are also numbered in the engravings, but as there are so few of them, the list is given under the engraving.

"Terms can also be found, if the general word under which it is classed is known, by referring to the latter in the alphabetical list. Thus, to find the name of the bearing which supports a car-body on each side of the king-bolt of a truck, look under 'Bearing,' and in the list will be found '*Truck Side-bearing.*' In a similar way other terms may often be found from these cross references.

"It must be remembered, though, that this book does not contain all the terms used by car-builders to designate the parts of cars. If it did, it would be many times its present size. All that was aimed at, in compiling it, was to assign appropriate names to the appliances and to the parts of cars in *common use.*"

In conclusion, the committee will repeat what they said in their report of 1878, which was that "if when this work was commenced the committee could have formed any idea of its magnitude, they certainly would never have undertaken it." Their chief pleasure now is in asking to be discharged.

L. GAREY,
M. N. FORNEY,
C. A. SMITH, } Committee.

Mr. Forney, for the *Railroad Gazette*, which publishes the work, then paid over the sum of $663.41 to the Treasurer of the Association, as royalty in accordance with the original agreement.

An invitation to visit the car-shops of the Michigan Car Co. and the Michigan Central Railroad was received and accepted.

The report of the Committee on Train Brakes for Freight Cars was then read, as follows:

REPORT ON TRAIN BRAKES FOR FREIGHT CARS.

TO THE MASTER CAR-BUILDERS ASSOCIATION:

GENTLEMEN: Your Committee on Freight-Train Brakes would submit the following report:

At the meeting of the Association in June, 1877, the first device designed to be an automatic brake independent of all *special* connections between the cars was presented.

Since that time, there are no less than 22 inventors of freight-train brakes, with whom your Committee have had correspondence, while there are still others known to members of the Association.

Of this number, eight have favored us with either tracings or models; of these five claim that their brakes act independently on each car. Of the remainder, two operate from either end of the train, six require a continuous connection of the brakes, and six act independently on any car to which they are attached. Thus showing that one-half of of these twenty-two inventions are designed to fill the requirements set forth by your Committee in their first report.

These inventions are widely distributed over the country, from the Atlantic Ocean to the Rocky Mountains and from Canada to the Gulf—so it appears that this subject is receiving the attention—from inventors at least—that its magnitude demands.

All the practical tests of these devices that were expected during the past year, owing to various causes, have not been made, although something has been done and preparations are in progress, which it is hoped will assist in perfecting *a reliable automatic* freight-train brake applicable and operative on any car equipped with it, without regard to its location or the presence of other cars not so equipped in the same train.

And judging from the developments of the past two years we are satisfied that the competing railroads of this country will be equipped with such a device in the *near* future without waiting for the wisdom of future ages, as your Committee are confirmed in their previously expressed opinion that the inventive genius of this country is capable of coping with any subject that is presented in a concise and practical manner.

All of which is respectfully submitted,

C. E. GAREY,
G. HACKETT,
L. GAREY, } Committee.

The report was received and discussion called for.

Mr. RAYMOND thought the committee by this time ought to be able to show something of progress. They come here year after year with the same story of uncompleted progress, and he did not believe in wasting time.

Mr. HOPKINS defended the committee, and knew of the almost utter impossibility of procuring railroad permission to make these tests. This fact, with the extreme negligence of inventors to present their productions, baffled all the industry of the committee.

Mr. C. E. GAREY defended its work and its apparent unfruitfulness. When this committee was appointed there was not a train brake for freight cars in the world. The subject has been agitated, and the Western Railway Association reports 45 or 50 now offered for railway inspection and adoption. He had communicated with over 20 of these, asking for models or tracings of their inventions, but only about half of these men had responded. Without facts to report, and these facts impossible to ascertain, the committee cannot report. But the railroads are waking up to the importance of this matter, and are desirous of finding out which are practicable and useful.

Mr. GORMAN spoke of the trials of the Card brake on several roads near St. Louis.

Mr. DAVENPORT thought that as in 1876 there was not a freight-train brake in existence, and that as now there are about 90 devised, the work of the committee had not been in vain.

Mr. RAYMOND charged that this Association had not the confidence of the railroad interests of the United States, and further, that the railroads are behind the times more than any other interest in the country, and that, in consequence, inventors are treated with a neglect and injustice that is wicked. He offered a resolution, which was adopted, for increasing the committee by the addition of four members, and that these members be delegates to certain work in their line of duty as such committee, and have results printed for the next annual meeting.

Mr. HOPKINS said the reason of the backwardness of the railroad companies in adopting new inventions was a natural one. The directors are gentlemen who are not practical operators. They see that they are getting along with what they have, and they do not feel the necessity of adopting new ideas until they have been thoroughly tested and proved.

Mr. C. E. GAREY requested all members to advise the committee of anything of interest on the subject of train brakes which might come under their observation during the year.

The Committee on "Substitution of Steel for Iron and Iron for Wood" submitted the following report:

REPORT ON IRON AND STEEL IN CAR CONSTRUCTION.

MR. PRESIDENT AND GENTLEMEN: Your Committee on "The Substitution of Iron for Wood and Steel for Iron in Car Construction," beg leave to report that the past year has not witnessed that progress in the line of substitution of iron for wood in the building of cars that was expected. A sufficient reason for this is found in the enormous advance in the price of iron, familiarly known as the "iron boom." We do not intend to discuss this tender subject any more than is absolutely necessary. It has passed into history and will be associated in our memories with that list of wild speculations which might properly be labeled "South Sea bubbles," and pigeon-holed for future reference. We do not view this in any other light than a temporary check. Modern improvements are steadily and certainly reducing the cost of iron and improving its quality, while on the other hand, timber is being used up much faster than it grows, and because the best is selected and cut first the quality is yearly becoming poorer on the whole, and sooner or later will drive us into this substitution whether we desire it or not. Then why not accept the situation and make the change gracefully? Iron body bolsters seem to be working their way into favor steadily. The natural tendency when substituting iron for wood is to make the iron needlessly heavy. We must bear in mind that wrought iron is more than thirteen times stronger than the best white oak when green, and the difference increases as the oak dries and grows weaker, while the strength of the iron remains, for all practical purposes, unchanged. Care should be taken to so proportion the bolster as to get the greatest strength in position to resist the severest strains. By figuring up the working strength of the iron body bolsters in ordinary use you will find them capable of carrying over 100 tons of load per pair. As the cars are calculated to carry but 15 or 20 tons of load each, what excuse have we for wasting so much iron? While iron is over thirteen times stronger than green oak it is less than seven times heavier according to bulk, therefore a properly proportioned iron body bolster should weigh but about one-half as much as a green oak bolster of equal strength. But what is the fact? Our iron bolsters are the heaviest. No wonder our general managers object to the greatly increased expense and useless dead weight of our elephantine body bolsters.

Iron trucks in all imaginable shapes and forms, patented and unpatented, are brought before us in bewildering array. We listen with rapt attention to the peculiar excellencies of the one being shown us, and are almost persuaded that it is *the* perfect truck and must be universally adopted, when along comes another good talker, who mildly suggests so many weak points in the other man's truck and so many good points in his that we are disgusted with ourself, turn our back upon number *one* and are charmed with number *two* until number *three* is explained, and that eclipses both the others, and so on to the end of the chapter. The amount of inventive genius at work on iron trucks shows the felt want of a more durable truck than has yet been produced. That the truck of the future is to be almost wholly of iron and steel few doubt. The arrangement and proportioning of the parts so as to secure the greatest strength with the least possible weight and at moderate cost, and so planned as to be readily repaired, is the problem. Don't be frightened, gentlemen, the Committee has no patent iron truck in its pocket which is to be sprung upon you for adoption. We only wish to turn your inventive genius toward the production of an iron truck with the above-mentioned good qualities. But little has been done in this country toward producing and bringing into use an iron or steel car frame. In Europe, where timber is more expensive than here, they claim to have reached a demonstration that iron is better, cheaper and lighter than wood for the bed of a car. There they proceed upon this theory in building cars. As all the blows in ordinary traffic are received and delivered and the weight carried on the bed of the car, there all the strength to resist blows and carry load should be placed. Therefore, they make sills and floor timbers of iron well braced and calculated to carry all the load, depending not at all upon the trussing of the sides for strength to help carry the load. They view the sides, ends and roofs as awnings, or tarpaulins, to cover the goods in the cars, and consequently make them as light as possible; in fact, they often carry such freight as we load in box cars on platform or flat cars, covering it with canvas to keep it dry. In this country such practice would not answer, yet we may learn something from them in the use of iron in place of wood in car beds. As we are compelled to have substantial covering for our cars, we wisely utilized the trussed sides to support the load. In this country where iron sills and floor timbers have been tried we are informed that their durability is perfectly satisfactory, the only complaint being the difficulty in repairing, owing to the faulty style of construction. Over twenty years ago a number of iron box cars were put in service on the New York Central Railway. We hope to hear a report of their performance from the representatives of that road present here to-day. Judging from the examinations made, your Committee expect a favorable report as to the iron car bed, but adverse as to the sheet-iron sides. Both here and in Europe they are condemned on account of destruction by rust. If some inventive genius will devise a coating for sheet iron which will protect it from rust, the chief obstacle to the introduction of iron cars will be removed.

Regarding the substitution of steel for iron in car construction almost nothing has been done. One trouble is that manufacturers of steel expect a high price for their products and thus prevent its use, where otherwise it might be profitably substituted. That this is short-sighted policy none can doubt. It is claimed by some who pretend to know, that Bessemer steel can be produced to-day cheaper than iron. If this is true there will be a break in price before long, and mild grades of steel will displace iron for many uses.

W. R. DAVENPORT,
JOHN KIRBY, } Committee.

The report was received and committee continued:

Mr. HILDRUP suggested the use of paper board as a substitute for wood for car-siding, and preferable to iron. Inquiry was made as to the proper size of iron for body bolsters.

Mr. DAVENPORT replied that it depended upon the conditions. Some are put in one inch thick and six inches wide; these would carry a tremendous weight. Mr. Wilder requires his draughtsman to figure up just what sizes are required in each case. Thin rolled iron is generally better quality than the thick.

Mr. ORTTON spoke of the nuisance of wooden transoms in trucks.

Mr. FORNEY offered a resolution that a committee be appointed to confer with a committee of the Master Mechanics' Association, regarding the preparation of a drawing of a standard journal-box, bearing and pedestal; the lithograph which was circulated some time ago being incorrect.

There was some discussion regarding the desirability.

The Treasurer presented his report, a brief summary being as follows:

Cash for previous year	$32.40
Receipts	330.00
Total	$362.40
Disbursements as per vouchers	358.75
Balance on hand	$3.65

The Committee on Association Rooms in New York reported that the rooms had been kept open and monthly meetings held therein. The total expenditures had been $1,238.54, and there was a balance of $9.62 on hand.

The CHAIR called upon the Committee on Screw Threads.

Mr. ORTTON replied that the committee had not prepared and circulated an address to general managers setting forth the desirability of adopting a uniform standard of screw threads, as they had been instructed to do.

Mr. FORNEY explained that the difficulty existed in the difference of the standards used by the different manufacturers of taps and dies. It was thought best to make an endeavor to bring the manufacturers to reconcile their standards and arrive at an agreement. Such a movement is on foot and promises success.

On motion, the committee was continued another year, with full power to act in the matter of securing the adoption of a standard.

The Committee on Annual Dues reported in favor of an assessment of $5 as annual dues from each member. Several members spoke of the desirability of placing the treasury in better condition, and of securing pecuniary assistance from the railroad companies.

After much discussion and the presentation of several resolutions looking to a partial reorganization of the Association, the whole subject was referred to a special committee, consisting of Messrs. Forney, Blackall, C. E. Garey, L. Garey, Ortton, Davenport, Davis, C. A. Smith and Aylesbury.

The Convention then adjourned until 9 o'clock next morning.

In the afternoon the car-builders visited the Michigan Car Works and the Michigan Central shops at the Junction.

In the evening some of the members contented themselves ashore, but most of them took a delightful steamboat ride upon the river.

SECOND DAY'S SESSION.

At the opening of the session the President appointed the following committees:

On Place of Next Annual Meeting, J. N. Mileham, L. S. Young.

To Nominate Officers, J. N. Mileham, S. A. Davis, J. H. F. Wiers.

On Death of W. W. Wilcox, to Prepare Resolutions, John Kirby, Wm. Campbell, M. N. Forney.

The special committee appointed the previous day to consider propositions for change or reorganization submitted the following:

"*Resolved*, That a committee of five members, including the President, be appointed to prepare a statement of the objects of the Association, to be presented to the managers of the railroads of the country with the request that the latter send representatives who are master car-builders or foremen in the car department to their meetings for the purpose of aiding in carrying out these objects, the committee to be authorized to call a special meeting of the Association if they think it expedient to do so, to make a report at the next meeting and to recommend means for increasing the efficiency of the Association and enlarging its usefulness."

Mr. HOPKINS spoke of the benefits which resulted in the manufactnre of car wheels from an understanding among manufacturers.

Mr. FORNEY said that if car axles could be made uniform the price would be cheapened. This was only one instance of benefits which might be derived. The association was advisory, and it could only be powerful when its representatives

came from many roads, and when they were men who would see the advisability of the improvements suggested.

Mr. KIRBY opposed the proposition to limit the representatives to master car-builders or foremen of shops.

Mr. RAYMOND moved to amend by striking out the words, "master car-builders and foremen of shops," leaving the choice of a representative optional with general managers.

Mr. ADAMS said if the general superintendents could come to the meetings of the Association occasionally they would better appreciate its importance. Let the choice of representatives be left discretionary with the general managers.

Mr. C. E. GAREY opposed the proposition to change the resolution as to representation. This was a master car-builders' association. To have representatives come who did not know the difference between a journal box and a railroad frog would not help them any. Many superintendents were lamentably ignorant of the practical workings of car-building.

Mr. AYLESBURY raised the point of order that according to the constitution a person to be a member of the Association must be a master car-builder.

Mr ADAMS said the general managers would send the men best qualified to represent their various roads. They would not take men from the trains or book-keepers from the offices. He had no fear that general managers would come in and change the whole order of things.

Mr. HOPKINS said general managers and their associates were men naturally qualified to conduct the finances of a road, but many of them had no practical knowledge of car-building. He had found plenty of them who did not know whether the journal-bearing was on the top or bottom of the axle. Being unqualified themselves to judge of these things, they could not always judge who should properly be sent to the meetings of this Association. If any circular was to be sent out, he proposed one stating what they had done for the last 10 or 15 years, not simply what they proposed.

The SECRETARY said the constitution provided that any one whose qualifications made him desirable could be a member of the Association

Mr. RAYMOND said the question of how the efficiency of the Association might be increased could be profitably discussed till adjournment if not settled sooner. The power of the Association was simply advisory. It should be much greater than that. The suggestions of the Association were now adopted only on a minority of roads. They needed two things—money to support the Association and power to carry out its suggestions. They had made the work of the Association as large as it could be without these additions. He withdrew his first amendment, and moved that the resolution be so amended that the circular should include applications to the companies to reply whether they would join the Association and pay a small assessment to support it.

The PRESIDENT called Mr. McWood to the chair, and said the actions of the Association were never intended to be final or binding, but simply recommendatory. An association of railroad companies which should agree to be bound by the acts of this body, could not be formed. According to his idea, the Association was right just as it was. Master car-builders could attend the meetings and then make recommendations to their general managers.

Mr. RAYMOND, having reduced his amendments to writing, moved to strike out the words "with a request that the latter send representatives," etc., and insert the words "and to correspond with said managers with a view to secure their promises, so far as possible, that their companies shall subscribe to this Association, and shall send the heads of their respective car departments to the meetings of the Association."

Mr. ORTTON thought there was no use in asking the railroads to do what they were doing already. This was not to be an association of railroads and the railroads should not support it.

The SECRETARY said he supposed Mr. Ortton meant that the Association should not ask support from the railroad companies, but that the individual members might.

Mr. AYLESBURY moved to table the matter. Carried.

The following report was then presented from the Committee on the

BEST DIAMETER FOR CAST-IRON AND STEEL-TIRED CAR WHEELS.

TO THE MASTER CAR-BUILDERS' ASSOCIATION:

To this date we have placed 198 42-inch car wheels under our cars; two Allen paper steel tire, and eight Washburn patent steel tire. The remainder were all cast-iron chilled wheels.

Out of the above 198 wheels, 86 chilled wheels have been removed, leaving 112 wheels which are still in service under our cars. Their use dates back to August, 1877. A few of the 86 wheels removed were taken out on account of broken tread or flange, and bad tread resulting from defects in their manufacture. Of the remainder, one was removed on account of worn or sharp flange; three were worn flat, and the remainder on account of worn tread.

Sixty of the wheels removed, which were worn out fair and square under ordinary usuage, made an aggregate mileage of 4,054,234 miles, showing an average of 67,571 miles. One pair made 122,773 miles, the only pair that has exceeded 100,000 miles so far; several other pairs have nearly reached it, viz., one pair 98,633 miles, one pair 95,509 miles, and another pair that have made 95,328 miles. The others made all the way from 90,000 down to 50,000 miles, a few pair running below that. The performance of 42-inch chilled wheels under our cars has so far been rather a disappointment to us. We expected that they would show an average of about 100,000 miles, and in order to prove a profitable investment, comparing their first cost with that of 33-inch chilled whee's, they must make that number of miles even if we make allowance for the many advantages accruing from the use of large wheels; but, although the use of 42-inch chilled wheels has not resulted in a reduction in the cost of "wheel service," in other respects they have proved very satisfactory, and there are undisputed advantages to be derived from the use of large wheels that will go far toward offsetting an adverse result in wheel service by effecting a saving in car service and maintenance, as well as engine service.

The use of 42-inch wheels, as compared with 33-inch, should show a saving of about 27 per cent. in the ordinary wear of journals and bearings, and a like saving in the actual running expense of oil and waste, and, if a record were kept, a considerable saving would undoubtedly be disclosed.

According to the testimony of engineers on this road, there is an appreciable difference in the draft of trains, especially in starting, in favor of trains made up of cars equipped with 42-inch wheel trucks. As the 42-inch wheel makes only 79 revolutions to the 100 that a 33-inch wheel makes, there, of course, is less friction for the former to overcome between the journal and bearing, and the increased leverage obtained in the large wheel aids materially in overcoming it.

I am of the opinion also, that the large wheel can better overcome the slight obstructions met with in the imperfections of track, etc., and will lessen rather than increase the draft on an up grade. From this I calculate that the work to be performed by the engine would be less, which would show a corresponding decrease in the cost of engine service.

The pair of paper wheels now running under our cars have made about 60,000 miles during the year that we have had them in service. They are running well, and judging from their condition and performance so far, they may be expected to make seven or eight hundred thousand miles. If they make what is claimed for them—500,000 miles—they will be an economical wheel to use. The eight Washburn wheels have been running under our officers' car only a few months, and have, as yet, made no mileage to speak of. They have steel tires, and should make pretty large mileage, and eventually may prove to be a very satisfactory and enduring wheel. However, we are placing a number of 42-inch Allen paper wheels under our passenger equipment, and I am inclined to think that they are the safest, easiest-riding, and, taking into consideration the many advantages derived from the increased size, the most economical wheel that can be used under passenger railway stock.

Finally, I would say that I fully indorse the use of 42-inch instead of 33-inch wheels under passenger rolling stock. As regards freight cars, I am not sure that the possible increase in the cost of wheel service, which might result from an increase in the size of wheels, would be counterbalanced by the advantages arising from their use.

It may not pay to increase the size of chilled wheels under any circumstances, as the record so far does not seem to show that the mileage capacity of the wheel is increased in the same ratio, but the wheel-makers claim that the early wheels furnished us were rather experimental, and that they were unable to produce as good a 42 inch wheel comparatively as they could a 33-inch, but that they have kept improving in the art until now they feel confident that they can produce a 42-inch chilled wheel that will make an average of 100,000 miles. Our record of 42-inch chilled wheels which are still in service, the early ones having been weeded out, tends very strongly to indorse their claims in that respect.

They are giving us much better service, some of them have been running a long time, and have undoubtedly made large mileage, and I should not be surprised if our record would shortly show such an average for them.

ROBERT MILLAR.

Mr. McWood, of the Grand Trunk, presented the following as his portion of the report:

FORTY-TWO INCH WROUGHT-IRON WHEELS.

There are 393 wrought-iron, steel-tired wheels, 42 or 43 in. in diameter, according as the thickness of the tire is 2½ or 3 in., which have run mileage under passenger cars varying with the time in service from 724 to 300,694.

Of these wheels none have been re-tired and only two have failed so far, one having a fractured tire at 196,150 and the other a defective weld in the hub at 112,800 miles. The average mileage of these wheels to date is 67,215.

These wheels are manufactured under what is known as the Mansell patent, the object of which is to provide a safe fastening for the tire, and it may be here remarked that one wheel (referred to above) ran for six months with the tire fractured without the slightest risk or danger, and was only removed when the flange at the point of fracture showed signs of giving way.

The thickness of the tires which have given the highest mileage to date was originally 2½ in. and is now reduced to 1⅞ in.

FORTY-TWO INCH CAST-IRON WHEELS.

There were 54 cast-iron chilled wheels put into passenger service, thirteen of which have failed at an average mileage of 81,363. The remaining 41 wheels now in service have made to date an average of 97,440 miles.

Cause of removal as follows: Five, pieces chipped out of head; two, sharp flange; five, worn flat; one, cracked in brackets.

FORTV-TWO INCH CAST-IRON WHEELS WITH STEEL TIRES FUSED ON.

Six of one make were put into service, all of which failed at an average of 60,577 miles.

Cause of removal: two, broken spokes; two, broken treads; two, worn flat and bad chill.

We have ten wheels of another make, having cast-iron centres and steel tires fastened on by a different process, none of which have as yet failed, their average mileage to date being 91,098. WM. MCWOOD.

Mr. McWood, in reply to inquiry, spoke highly of the Mansell wheel, mentioned in his report. He said that hot boxes were almost unknown. They used the 42-inch wheel, and invariably found them perfectly balanced. He thought imperfect balance was the cause of hot boxes. Whether they were easier to ride upon than the 33-inch was, he thought merely a matter of fancy.

Mr. ADAMS stated that his company has a large number of 33-in. steel-tired wheels, in fact under all their passenger equipment. They have 2,000 in all; some 110 have failed. The average mileage of those which failed was over 100,000 miles. The average of the others thus far is from 200,000 to 250,000 miles. They had not found as much difference in smoothness of riding in favor of 42-in. wheels as they had anticipated. There is a saving in general wear, brass and oil. In the matter of power required, Mr. Dudley had carefully investigated the matter, and determined that on a level track the 42-in. wheels save from four to five per cent. in power required. But on grades, the power is lost in proportion to the grade. Mr. Dudley advised the company that they would not gain anything by using 42-in. wheels on their road. They have just put paper wheels under their General Manager's car.

Mr. MILLAR had figured that from the experience he had had with one pair of paper wheels, they would last ten years and make a mileage of 800,000 miles before the tires are worn out.

Mr. ADAMS mentioned a wheel which has made a mileage of 70,000 miles with very slight wear, under a Wagner car. It was made of a new material, and promised well.

Mr. KIRBY had tried 42-in. cast wheels without satisfaction, owing to the wheels being out of balance. Mr. ORTTON suggested that there is the same trouble with 33-in. cast-iron wheels. There is a gain of 27 per cent. in the use of a 42-in. wheel, *i. e.*, one revolution of the axle carries the car that much further with a 42-in. wheel than with a 33-in. wheel. This saves in the friction on the journal.

The Committee was, on motion, continued for another year.

Some discussion followed, in relation to the disposition to be made of the money just paid in as royalty on the Dictionary.

The Committee to Investigate the Cause of Accidents to Train-men, offered no report, claiming that their report of last year fully covered the case.

The Association then adjourned until next day, to give time for a meeting to revise the rules for interchange of freight cars, a report of which we give herewith, though really a separate affair.

MEETING TO REVISE RULES FOR INTERCHANGE OF FREIGHT CARS.

The call for the meeting having been read, Mr. COOPER spoke in reference to the return of cars "in bad order." Every one knew, he said, that a car could be returned from Maine to California by a car inspector's chalking it to be returned on account of "bad order." The inspector's action is never questioned. This practice he considered was liable to great abuse. He offered the following:

"*Resolved*, That wherever a foreign car is reported to a master car-builder or person acting in that capacity as unfit for service, it shall be his duty to direct a competent representative or make himself an inspection; and if found that the car needs more than light repairs which should be made by the road on which the car is inspected, then it shall be his duty to have the car properly billed to the person in charge of repairs on the road to which the car belongs, at the same time sending to such address a notice that such car had been returned to him unfit for service, and specifying the repairs needed."

The rules "governing the condition of and repairs to freight cars for the interchange of traffic" were taken up *seriatim*.

Rules 1 and 2 were unanimously agreed upon. On Rule 3, relative to the causes for which "cars may be refused," there was a long and animated discussion. Some contended that brakemen invariably pick out one or two of the best brakes and used them, thereby discriminating largely against the brakes used, necessarily wearing them out and causing the wheels to slide, to the serious detriment of their owners. The rule was finally adopted without change. Rules 4, 5, 6, 7, 8 and 9 were agreed upon without change. The first clause of Rule 10 was amended to read as follows: "Wheels and axles used to replace those broken or worn out under fair usage will be charged to the company owning the car, the word car being substituted for the word trucks." In Rule 12 the words "or trucks" were stricken out.

In considering Rule 13, there was some discussion over the clause providing that repairs on foreign cars must be with "the same form, kind and quality of material originally employed," objection being made to the necessity for replacing parts of cars with the same kind of timber of which they were originally constructed, owing to the scarcity of white pine in some parts of the country. No change was made, however, in the rule.

Rule 17 provides for the adjustment of losses on foreign cars. In paying for cars destroyed, it is "provided that such allowance shall in no case exceed 60 per cent. of the established price." Mr. ADAMS said when a new car was destroyed, an injustice was done to the owner of the car, when he was only paid 60 per cent. of its cost. He moved that the proviso be stricken out.

After being discussed the motion was lost and the rule adopted.

The standard value of a new box car was fixed last year at $425, $215 for the body and $210 for the trucks. Mr. Adams moved that the price be now fixed at $450, equally divided between body and trucks. Carried, 18 yeas and 10 nays.

Mr. ORTTON moved that the same price be fixed for the ordinary stock car.

Mr. LEUTZ moved that the price be fixed at $425, $200 for the body and $225 for the trucks. Lost.

Mr. Ortton's motion was carried.

Mr. ORTTON moved that the price of flat cars be fixed at $350, $225 for the trucks and $125 for the remainder.

The price of 8-wheel gondola coal cars was fixed at $375, and of four-wheel coal cars at $225. The price of a four-wheel box car was fixed at $250.

The meeting then adjourned. The revised rules will be published as soon as an official copy is received.

THE EXCURSION.

In the afternoon there was an excursion on the steamboat City of Detroit, which was well managed and thoroughly enjoyed. The members of the Association and the invited guests numbered several hundred, but there was no unpleasant crowding in the spacious cabins of the boat. Music was furnished by an excellent band, and a cold collation was served during the trip. The steamer left her dock, at the foot of Wayne street, at 2:45 p. m., rounded Belle Isle, and then went down to the head of Lake Erie, thus showing the strangers the full length of the beautiful river. The dock was reached on the return trip at 6:30 p. m.

THIRD DAY'S SESSION.

The Auditing Committee reported the Treasurer's report correct.

The Committee on Standard Car Axles stated that no report was necessary—a standard having been adopted by this Association and the Master Mechanics' Association.

The Committee on Subjects for Discussion at Next Convention reported as follows:

1. Train brakes for freight cars; the committee to be continued.

2. Substitution of steel for iron and iron for wood in car construction.

3. Improvements in cars during current year; a new committee to be appointed.

4. Cast-iron and steel-tired car-wheels, the committee to report upon the best diameter for these, and on the means which should be adopted to maintain uniform diameter of wheels which are nominally of the same size; and whether the tread of the wheels should be coned, and to what extent; two new members to be added to the committee.

5. To recommend a form and dimension for a standard draw-bar and draw-spring, and the best method for bringing about uniformity in their construction; the committee to investigate and report whether a pair of dead blocks or a single buffer-block gives the greatest security to train-men and protection to freight cars, and to recommend dimensions for each.

6. To investigate and report whether it is desirable and economical to apply brakes to all the wheels of freight cars, and the best way of bringing about uniformity in their construction; and to recommend forms and proportions for standards for those parts of brakes which require most frequent renewals.

7. To investigate the causes of accidents to train-men and report what means can be provided to protect train and yard-men from injury while in the performance of their duties. The Yardmasters' Association is invited to communicate with this committee.

8. The subjects and committees numbered 9 and 14 in the last annual reports to be consolidated into one. (These are the Committee on Standard Screw-threads, and the Committee to Prepare a Memorial to Managers on the Necessity of Even Sizes of Screw-Threads.)

9. To draw up a circular for distribution embodying the necessities for brake staffs being placed in the same position in all freight cars.

The committee recommended that a new committee be appointed on this subject.

The report of the committee was adopted.

The SECRETARY then moved that a committee be appointed to investigate the subject of providing a standard wheel-gauge to fit car wheels by, and to determine the gauge of tracks.

Mr. ADAMS said that in New England there were a great many curved tracks, and the wheels had more lateral play than was allowed on Western roads. He did not think that absolute uniformity could be obtained on all the roads.

Mr. DAVENPORT said this was an important question. The tendency now was to give a larger play. Flanges cut out on

many roads because the wheels were too light on the rails, and a great deal of power was lost by increased friction.

Mr. VERBRYCK and others discussed the subject briefly.

Mr. WEIRS favored a standard gauge.

Mr. YOUNG said on the Pennsylvania there used to be a tendency to narrow the gauge. The law of the state of Ohio then fixed the standard gauge of track as 4 ft. 10 in. The Pennsylvania first had a gauge of 4 ft. 8½ in., and gradually increased it.

Mr. FORD said he did not see how a standard gauge for wheels could be fixed on by the master car-builders as long as the different lines would not adopt a uniform standard for their tracks.

Mr. DAVENPORT said this Association had no legal power to make these changes on the various roads, but he called on those present to witness that when the Association settled anything as desirable a gradual revolution in the direction recommended was sure to take place. What was said here would go a great way in influencing the railroad companies of the United States.

Mr. OLMSTED moved that the Association recommend that a committee of civil engineers be appointed to investigate and recommend steps to harmonize the gauge of roads.

Mr. YOUNG seconded the motion. He had heard it said that this Association had no power. Ideas were power. He asserted that this Association had done more to establish right ideas in reference to railroad equipment than any and all other influences. The question before the country was how shall the greatest development be made in the cheapest possible way. How could the great products of the country be transported. More railroads must be constructed, or those now built must be made more efficient. He knew of many roads which were so powerful that they were a law unto themselves, but in most things they of their own free choice had come very near the standard recommended by this Association.

President GAREY said the number of roads interchanging cars was increasing year by year. It was eminently important that a standard gauge should be adopted. He thought a committee should be appointed who would sift the matter to the bottom; who should meet with as many representatives of railroads as possible, and determine a standard which should be acknowledged to be right. There was more money for the roads in this thing than in any other.

Mr. KIRBY, of the Lake Shore & Michigan Southern, said when that road narrowed its gauge between Toledo and Buffalo from 4 ft. 9 in. to 4 ft. 8½ in. they could not haul as many tons in a train as before. There was a new steel rail laid of a different shape from the old iron one. The Chief Engineer of the road recommended that the gauge of the wheels be narrowed three-fourths of an inch. The tonnage of trains was thereby increased from 181 tons to 231.

Mr. WEIRS moved that a committee of master car-builders be appointed to confer with the civil engineers, provided such committee was appointed. Carried.

Mr. DAVENPORT moved that the Association express its judgment that three-fourths of an inch play between wheels and track had been demonstrated the most economical in the movement of cars.

Mr. AYLESBURY thought that the resolution was a little premature. They had better wait until the report of the committee was heard next year.

Mr. DAVENPORT said the first resolution was in reference to the judgment of the Association concerning the amount of play desirable between track and wheels.

The motion was carried.

The question of disposing of the funds of the Association was discussed, and the money ordered left in the hands of the Treasurer.

After some discussion New York was fixed on as the next place of meeting.

An invitation to visit the Pullman Palace Car works was accepted.

A resolution of thanks, offered by Mr. Ortton, to Judge Chipman, the citizens of Detroit, the city government and all who had contributed to the happiness of the members of the Association while here, and to President Wagner, of the New York Central Sleeping-Car Co., for use of coaches, were adopted.

Invitations from Buhl, Ducharme & Co., and the Peninsular Car Works, to visit their establishments, were received with thanks, and the Association voted to disregard them only because of insufficient time.

Mr. HOPKINS offered the following resolution:

Resolved, That a committee be appointed by the President to gather up and present to this Association at its next annual meeting those facts not involved in the duties of other committees as in its judgment will be of service in performing the business of the Association. Adopted.

The question "What is the best material for brake shoes?" was discussed.

Mr. COULTER said one Congdon shoe would outlast four common ones, in his experience.

Mr. ADAMS said the question was what material had the most retarding power as well as the greatest wearing qualities.

Mr. ORTTON said the question of cost of material was of no importance when an open drawbridge was being rapidly approached or a collision impending. In his experience cast-iron was the best material. He had heard it stated that wrought-iron was more valuable than the Congdon brake. Science was what they wanted, not opinion.

Mr. GORMAN said he had tried cast and wrought-iron brakes-shoes on a switch engine. The wrought-iron lasted three times as long as the other and had greater resisting power.

Mr. AYLESBURY said on his road they had tried cast-iron shoes and Congdon shoes on the same cars. On a mail-car next the engine the Congdon wore three times as well as cast-iron. On a baggage-car the difference was very small.

Mr. ORTTON said a shoe usually wore away most rapidly when its aggressive force was the greatest. The Congdon shoe wore well. He could not say it was better in other respects.

Mr. C. E. GAREY said he was in favor of wrought-iron over cast-iron in almost every place. He had made some experiments with cast-iron shoes, with the Congdon patent and with wrought-iron. In order to test the matter accurately he had had a set of car-wheels arranged to be run by a stationary engine and belting. He first ran the wheels at a speed of 45 miles an hour, and applied a cast-iron shoe with a pressure of 200 lbs. The wheels would not stop. Shutting off the power, the wheels ran 22 seconds. He then tried the Congdon shoe, with precisely the same result. He then tried the wrought-iron shoe, and the wheels stopped in one minute and 14 seconds, the engine pulling all the time. He then put on a weight of 392 lbs. and made three stops in 32, 30 and 30 seconds, respectively. The stops made with the Congdon shoe were in 47, 37 and 36½ seconds; with the wrought-iron shoe, in 20 seconds each time, showing that at 45 miles per hour the Congdon shoe was not equal to the cast iron, and that the wrought iron was superior to both. He then changed the speed to 35 miles per hour, and made three tests with each shoe, at a pressure of 200 lbs., as follows: With the cast-iron shoe, 59, 53, 60 seconds, respectively; Congdon shoe, 1.31, 1.10, 1.04; wrought-iron shoe, 28, 34, 27 seconds. With a weight of 392 lbs., the stops were made with the cast-iron shoe in 16, 15, 15 seconds; with the Congdon shoe, in 17, 16, 16½ seconds; with the wrought iron in 11½, 11, 11 seconds. At 25 miles an hour the cast iron stopped the wheels, same weight applied, in 44, 43½, 38½ seconds; Congdon, 21, 20, 20, showing the superiority of the Congdon shoe over the cast iron at 25 miles per hour. The stops were made by the wrought iron in 14, 12, 12, less than one-third of the time required by the cast iron. Wetting the wheels, the stops were made as follows: Cast iron, 40, 30, 44; Congdon, 15½, 15, 15, wrought iron, 11, 10, 10½. With the speed reduced to 12 miles per hour, the weight of 392 lbs. failed to stop the wheels. The weight being increased to 500 lbs. the cast-iron shoe made five stops in 34, 20, 26½, 19, 16. With wet wheels the cast iron shoe made five stops in 11, 10, 10, 10½, 9½. Congdon shoe, dry wheel, 9, 7½, 5, 5½, 4; wet wheel, 6½, 5, 6½, 9, 7½; wrought-iron shoe, dry wheels, 10, 8½, 7½, 7, 6; wet wheels, 7, 6½, 6, 6, 6; The total time required by the cast iron in making the stops was 793 seconds; Congdon shoe, 733 seconds, wrought-iron shoe, 335 seconds. The cast-iron shoe and the Congdon shoe had a surface of 42 square inches, the wrought-iron of 36 inches. The bearings were not all perfect, and the wrought-iron surface of the Congdon brake was not all utilized.

Mr. ORTTON thought the experiments showed approximately the aggressive power of the various metals. He thought, however, that the results might possibly vary when a pressure of 5,000 lbs. was put on the brake instead of 300 or 500.

Mr. GAREY called attention to the fact that the conditions acted equally on all.

Mr. FORD said the experiment was hardly a fair one so far as the Congdon brake was concerned, since, as Mr. Garey had stated, the wrought-iron portion was not thoroughly utilized.

Mr. AYLESBURY stated that, having tried cast-iron and Congdon shoes on a mail car next the engine, the cast-iron wore away the most rapidly. On a baggage car there was but little difference.

Mr. KIRBY said that from experiments he had made, he found the relative cost of furnishing and keeping cars supplied with shoes was as $2.13 was to 79 and 94 cents for the Congdon, wrought-iron and cast-iron shoes respectively.

Mr. HOPKINS said the wear on the tread of the car wheel, caused by each shoe, had received no attention. He was convinced, from what he had seen, that wrought-iron shoes wore away the face of the wheel faster than cast iron.

Mr. GAREY thought the wear in this direction was about equal.

Mr. MILLER, of the Michigan Central Railroad, said that a saving of $5,000 had been effected in one year by the use of the Congdon brakes, by lessening the wear of brak shoes.

The PRESIDENT said the following question had been handed him for discussion: "What has been the experience of members during the past year in the repairs of cars equipped with continuous draw-bars?"

Mr. YOUNG said his company were on the whole well satisfied with this class of cars thus far. They had been saved a great deal of expense by the use of them.

Mr. ORTTON said he believed the principle of the continuous draw-bar a good one. The only unsatisfactory experiences they had had with them were owing to bad workmanship. He believed there was considerable less repairing necessary to cars using this form of draw-bar than to the others.

Mr. VERBRYCK thought the only difficulty was that arising from inferior workmanship.

Mr. ADAMS said he was not a swearing man, but if he were to express his sentiments in reference to the continuous draw-bar, he should say it was the cussedest thing that ever was invented. The bars were continually breaking, and it was very difficult to remove the long rod from beneath the car.

Mr. H. CAMPBELL found the same objection as the others in reference to difficulty of repair.

President GAREY thought the principle of the invention, distributing the strain, was right, and when the cars were well made, there was no trouble with them.

Mr. DAVIS said the breakages in continuous draw-bars did not occur often in the later styles of cars, but in the older ones, which were poorly made.

Mr. AYLESBURY had 300 continuous draw-bars on his road; when properly constructed this draw-bar is undoubtedly a good thing.

Mr. C. E. GAREY stated that on his road they had no trouble with the continuous draw-bar which they manufactured in their own shops. Mr. Ford said that out of 2,200 cars sent to the shops of his road for light repairs, over half had been for defective draw-bars and draft-timbers. They had a large number of continuous draw-bars going over his road, and they had but very little trouble with them, and then it resulted from faulty construction. No invention was perfect at first, and this one had been greatly improved.

The discussion was then closed.

Albert F. Hill, a civil engineer of New York City, was unanimously chosen a corresponding member.

The Committee on Nominations reported in favor of continuing the same officers in office another year.

Mr. RAYMOND said the officers held over till their successors were appointed. He therefore moved that the election of officers be postponed one year. Carried.

Secretary SMITH thanked the Association for his re-election. He was followed by President GAREY in a short speech to the same end.

Mr. ADAMS moved a vote of thanks to the officers of the Association, which was carried by an unanimous rising vote.

The convention then adjourned to meet in New York the second Tuesday in June, 1881.

In accordance with the invitation of the Pullman Palace Car Company, the shops were visited in the afternoon.

The arrangements for the entertainment of members were very complete, and were fully appreciated by them. They were made by the following business houses of Detroit:

Michigan Car Co.; Pullman's Palace Car Co.; Berry Brothers; Detroit Bridge & Iron Works; Griffin Car Wheel Co.; Detroit Car Spring Co.; Detroit Car Wheel Co.; Baugh Steam Forge Co.; Peninsular Car Co.; Fulton Iron & Engine Works; Ducharme, Fletcher & Co.; Buhl, Ducharme & Co.; Michigan Bolt & Nut Works; Russel Wheel & Foundry Co.; Michigan Stove Co.; Farrand, Williams & Co.

The committee in charge consisted of Messrs. W. C. Colburn, T. A. Bissell, T. A. Griffin, J. M. Rogan, A. Hooper and J. Taylor.

The Millers' Convention on Railroad Regulation.

During the Millers' Convention recently held in Cincinnati, which was very largely attended, the following resolutions were passed:

Resolved, by the millers of the United States, in convention assembled, That the question of transportation and holding the great corporations of the country to a proper responsibility to the public is one of the most important of the age; that in the rapid development of our country, under the influences of the great forces of steam and electricity, legislation for the protection of the public interest has lagged behind, while the compact force of corporate organization, acting upon our national and state legislatures, has resulted during the last quarter of a century in the laws of the country giving undue consideration to their interests, and while treating them justly, the public welfare demands that they should be controlled and supervised in the interest of the whole people.

Resolved, That the practice of establishing a fictitious basis of the cost for railroads, through construction companies, stock-watering and other similar devices, is detrimental to the public interest, and should be guarded against by the legislatures in every state.

Resolved, That the principles of equality and publicity in the management of railroad corporations should be embodied in the statute law of the United States and of individual states, and that a National Board of Railroad Commissioners should be created by Congress, and auxiliary boards by various states, to study and supervise the workings of these great highways, and recommend such legislation as may be necessary to protect the public interest.

THE SCRAP HEAP.

Railroad Equipment Notes.

The Taunton Locomotive Manufacturing Co., at Taunton, Mass., has declared a dividend of 5 per cent. to its stockholders. The company recently shipped two engines with 18 by 26 in. cylinders and 4½ ft. driving-wheels to the Atchison, Topeka & Santa Fe road.

The Beaver Falls Car Works, at Beaver Falls, Pa., have been in operation for 15 months, and in that time have turned out 600 freight cars. They are now finishing an order for 250 gondolas for a Western road, and will soon begin work on an order for 150 box cars.

The Ohio Falls Car Works, at Jeffersonville, Ind., have recently taken contracts for a large number of freight cars, including 400 box cars for the Chicago, Milwaukee & St. Paul.

The Schenectady (N. Y.) Locomotive Works have lately delivered two heavy passenger engines, with 5-ft. 9-in. driving wheels, to the Southern Pacific road. They are to run the fast trains between San Francisco and Monterey.

The Barnum & Richardson Manufacturing Co., in Chicago, is making 100 car-wheels a day, and from 8 to 10 tons a day of general castings.

Wells, French & Co., in Chicago, have just taken an order for 200 box cars for the Chicago & Alton road.

Iron and Manufacturing Notes.

Lanesboro Furnace, at Lanesboro in Berkshire County, Mass., was lately started up after a long rest.

The Phœnix Iron Co. has stopped work in its mill at Norristown, Pa., for the present. Its large new mill a Phœnixville is nearly ready to start.

The Beaver Falls (Pa.) Rolling Mill is working full time, with plenty of orders on hand.

An anvil weighing 50 tons was successfully cast a few days since at the Black Diamond Steel works in Pittsburgh.

The 25 years corporate existence of the Detroit Locomotive Works expired by limitation some days ago, and the company was immediately succeeded by the Buhl Iron Works. The company had determined to transfer all the property and franchises of the works to a new organization before the old corporation was actually dissolved, and by unanimous vote the Buhl Iron Works will be its successor. The following were chosen directors of the new company: C. H. Buhl, John Owen, D. R. Pierce, Cleveland Hunt, T. D. Buhl, R. A. Alger and Wm. A. Moore. The business will continue without a change or interruption, the only change being that of name. The company has not made any locomotive engines since 1857, and the old name was thus misleading.

Mr. O. W. Davis, Manager of the Katahdin Iron Co., whose furnace is in Piscataquis County, Me., writes to the *Bulletin* of the American Iron & Steel Association as follows: "I have finally overcome our old enemy, sulphur, and we are now doing some very remarkable work; having made last week 121 tons of very handsome car-wheel iron, on 83 bushels of charcoal to the ton, from ore averaging 54 per cent."

The Riverside (O.) Rolling Mill is now nearly completed. It will make bar, hoop, sheet and boiler-plate iron, and will have a capacity of 6,000 tons a year.

The Brown & Sharpe Manufacturing Co., in Providence, R. I., is building a large new foundry. The shops are very busy.

The Indianapolis Rolling Mill is working a full force, and is just now making light rails for a narrow-gauge road.

Springfield Furnace, in Blair County, Pa., is in blast and doing well. The furnace was built in 1815, and uses charcoal for fuel.

Houdlette, Ellis & Co., iron merchants, of No. 19 Batterymarch street, Boston, have stopped payment, "by reason of the decline in the value of their merchandise, the refusal of their customers to carry out contracts of sale, and their losses."

Bridge Notes.

The Morse Bridge Co., at Youngstown, O., has several large bridges in progress, besides a number of small highway bridges.

The Wrought Iron Bridge Co., at Canton, O., has the contract for an iron bridge of 135 ft. span at Northampton, Mass.

The Detroit Bridge & Iron Works have the contract for the roof of the new Pullman Car Works in Chicago.

The Toronto Bridge Co., at Toronto, Ont., has been awarded the contract for the bridges over the Eastern and Western outlets of Lake of the Woods on the Canadian Pacific, in Manitoba. Each bridge will consist of a pinned truss, 200 ft. span, with iron stringers, with a plate-girder, 50 ft. span, at each end, making each bridge 300 ft. long.

The Passaic Rolling Mill Co. at Paterson, N. J., has the contract for an iron highway bridge over the Passaic River at Wagaraw, N. J. The company will also remove the old wooden bridge, which has stood over 30 years.

Prices of Rails.

Steel rails are quoted at $60 to $65 per ton at mill, with prices fairly steady and a moderate business done. The mills are all fully occupied, and are not pressing for orders.

Iron rails are quoted at $47 to $50 per ton at mill for small lots, but it is said that large orders could be placed at somewhat lower figures. Sales of English rails have been made at $46 per ton at tide-water.

The market for old iron rails is weak. Philadelphia prices are $25.50 to $26.50 per ton, with very slow sales.

Some Facts.

We learn that the widow of a man who was killed a week ago by a railroad accident, and who lives not a thousand miles east of Elmira, is to be married in a day or two to an ardent lover, who no doubt hails that locomotive as his very best friend.—*Elmira Advertiser.*

That is pretty sharp work, even for a railroad accident.

A Boston paper says: "At the annual meeting of the Portland, Saco & Portsmouth Railroad a vote of thanks was passed to Mr. Thorndike, the retiring director, of $41,951." A pretty substantial vote of thanks, if correctly reported;

but it looks as if that $41,951 had been dropped in from another paragraph.

A scandalous New York paper says that on a short road in that state a few days ago a train pulled up at a small station where it was not advertised to stop. A passenger, anxious to learn the cause of the stoppage, inquired about it, and found that a lady had signaled the train to stop in order to see whether any passenger could oblige her with change for a five dollar bill.

Nevada papers never depart from the truth. An item from one of them, a few days ago, gave an account of a Chinaman flying a sheet-iron kite having a log-chain for a tail. Another Nevada paper gave a circumstantial account of a Reno man flying a bar-room mirror, six feet by ten in size, the tail made of all the tin dippers in the place. The experiment was a success, even to setting fire to a hay-stack twenty miles away, for which he had to pay $500. Now comes the Truckee *Republican*, which—but here is the story in its own words: "A hand-car, with four men, started for the snow-sheds to repair an old snow-plow which was damaged by the storm. On returning the wind was so strong that they had to get off the hand-car and push it down hill."

Put on the Air Brakes.

A Harlem Railroad train crowded with passengers came very near being wrecked at the Bronxville bridge, in Westchester County, on Sunday night. The train was coming south, having started from White Plains at 5:15. About a mile this side of Bronxville station a horse suddenly appeared in front of the locomotive and ran down the track. Engineer Stewart blew his whistle and used every means in his power to frighten the animal off the track, but on he flew. Ahead about an eighth of a mile was a covered bridge which spans the Bronx River. The engineer took in the situation at a glance. He knew that he must either reach the bridge before the horse did or stop before he got there, and as his locomotive and train were not provided with the air brake it was not an easy thing to stop. To strike the horse on the bridge would wreck the whole train. Mr. Stewart had no time to revolve the matter in his mind. Whatever he did must be done instantly. He reversed his lever, whistled for brakes and used every appliance at his command to stop the train, and brought it to a standstill at the very edge of the bridge. The horse, wild with terror, had gone headlong into the bridge, as the engineer thought he would, and had fallen between the ties, where he became wedged in. After a long delay the ties were pried apart and slipped to one side, so that the animal dropped into the stream below, from which he was rescued only slightly hurt. If the train had struck the horse on the bridge, as it certainly would if the engineer had failed to do the right thing at the right time, a terrible wreck and probable loss of life must have followed. Patrons of the Harlem Railroad condemn the company for its neglect to provide its trains with all the appliances used by other roads to insure safety. Not more than one train in ten is provided with the air brake.—*New York Herald, June 15.*

A Double Head-Light.

Irwin A. Williams, the locomotive head-light manufacturer, of Utica, gave a private test of a new double reflector lamp, not long ago, which attracted considerable attention. The Albany *Argus* says: The attention of passers on Broadway was greatly attracted, Tuesday and Wednesday evenings, by a new and brilliant light in front of the Mansion House, which threw in each direction—up and down the street—rays, the brilliancy of which almost caused the flames of the street gas lamps to cast shadows, and certainly turned them pale and sick with envy. Investigation and inquiry elicited the facts that the novelty consisted of two reflectors of the kind used in locomotive headlights, placed back to back, with a coal-oil lamp in the centre, and that it was made by I. A. Williams, for Mr. Thompson, the proprietor of the Mansion House. Apprehensions that the arrangements would prove ineffectual because of there being no reflecting surface back of the light, have been wholly dispelled by its brilliant performance."

A Station Indicator.

Mr. Charles Minton of Woodside, N. J., has invented an improved station indicator for railroad cars. The face of this indicator is about a foot square and presents a level surface. Its upper half is stationary and has in large letters "The Next Station is," the lower half on which the stations are shown being movable. Some notion of the machine may be gained from the statement that it is similar in construction to the date box, which is familiar to most persons, by which the month is given on the upper part of its face and the day of the month below, the day of the month being changed as required by rollers which work a movable apron on which the figures are printed. By the addition of mechanism, however, the station indicator is operated instantly by simply touching a button, and this can be done from either inside or outside the car. The machine is intended to be placed in the car, on the right-hand side of the door facing the passengers; and when the train leaves a station the conductor or brakeman touches a button. This causes a bell to ring immediately, attracting attention to the indicator, which shows in large legible letters, "The next station is New Haven"—or elsewhere, as the case may require. The indicator is capable of showing the stations on two or more lines, so as to be available in case a railroad company should shift their cars from one line to another, and it can also be operated automatically if desired. For instance, on the elevated railroads, shutting the gates on the car platform—an operation that as a rule must be performed at all stations—might be made to operate the indicator; but as the conductor must be there to shut the gate, and he would have when there simply to raise his hand in order to touch the button, it might possibly ensure care and watchfulness to work it by hand. The operator, it is said, can immediately detect any error in the working of the indicator whether he be inside or outside the car.

Most persons have experienced more or less anxiety, discomfort and perplexity from the inefficient methods the railroad companies employ to acquaint the passengers with the name of the next station. The usual method is for the brakesman to open the car door and bawl out "Har-boo" or "Boo-har," imparting to the passengers much more doubt and irritation than information. As a general rule, on all surface roads, it appears to be practically impossible for the company's officers properly to articulate the names of stations. On the elevated roads, however, probably because the passengers' ears are distracted with less noise, the call of the conductor is usually fairly audible. But even on an elevated road it would be comfortable during a journey to know what is the next station by simply glancing at an indicator.—*New York Evening Post.*

ANNUAL REPORTS.

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Sussex.

This company owns a line from Waterloo, N. J., to Franklin Furnace, 24 miles, with an extension from Hamburg Junction to McAfee Valley, 4 miles, the two being connected by the use of the New Jersey Midland track from Franklin Furnace to Hamburg Junction, 2 miles. There is also a branch from Junction to Branchville, 6 miles, making 34 miles owned and 36 worked. The report to the State Comptroller of New Jersey is for the year ending Dec. 31.

The capital statement is as follows.

tock ($48,194 per mile)	$1,638,600
Bonds ($6,956 per mile)	236,500
Total ($55,150 per mile)	$1,875,100

There is no floating debt beyond the usual current balances, estimated at $3,000 at the close of the year.

The earnings and expenses were as follows:

	1879.	1878.	Inc. or Dec.	P. c.
Passage	$23,475.96	$23,945 66	D. $469.70	2.0
Fr'ght and expres	95,645.02	72,239.21	I. 23,405.81	32.4
Other sources	4,046.93	5,832.07	D. 1,785.14	30.7
Total	$123,167.91	$102,016.94	I. $21,150.97	20.7
Expenses	89,073.63	70,100.86	I. 18,972.77	27.1
Net earnings	$34,094.28	$31,916.08	I. $2,178.20	6.8
Gross earn. per mile	3,421.33	2,833.80	I. 587.53	20.7
Net earn. per mile	947.06	886.56	I. 60.50	6.8
Per cent. of exps.	72.32	68.73	I. 3.59	5.2

The result of the year was as follows:

Net earnings	$34,094.28
Interest and state tax	18,556.80
Surplus for the year	$15,537.48

This surplus is a little less than 1 per cent. on the stock. No dividends were paid. The increase in freight earnings was chiefly due to the activity in the iron business, coal and iron ore being important items of freight on this road. They are necessarily carried at low rates, however, so that there was a large increase in expenses as well as in earnings. The road has a considerable milk business, which is its most profitable traffic.

The recent completion of the Warwick Valley road to McAfee Valley may bring this road some additional ore and local freight, but will hurt rather than help its milk business.

Carolina Central.

This road extends from Wilmington, N. C., through Charlotte to Shelby, 242 miles. It was originally the Wilmington, Charlotte & Rutherford, and passed to the Carolina Central Company in 1873, through foreclosure. The second company became bankrupt and was turned over to receivers April 5, 1876. They have lately made a report for the year ending March 31, 1880, for the information of the bondholders.

Since the report was made, the road has been sold (May 31) and bought by the bondholders.

The earnings of the road for the last year were as follows:

Passage	$59,209
Freight	388,506
Mail and express	14,917
Miscellaneous	3,887
Total ($1,928 per mile)	$466,519
Expenses (59.40 per cent.)	277,250
Net earnings ($782 per mile)	$189,269
Taxes, etc	$11,888
Interest on Wilmington Bridge bonds	15,000
Filling trestles, extraordinary repairs, etc	28,573
New construction	16,453
New equipment	16,542
	88,456
Balance, surplus	$100,813

The Receiver's report says: "As the duties of the Receivers will terminate with the sale of the property of the company, ordered for the 31st of the present month (May), under decree in foreclosure of the first mortgage, it seems proper to briefly review the operations of the road from April, 1876, when the property came into their possession, to the present time. * * They have endeavored, in pursuance of the policy adopted at the outset and approved by a large majority of the bondholders, to use surplus earnings of the road, as far as possible, in such substantial improvements to the property as would enlarge its earning capacity, and consequently enhance its value; much has been accomplished in this direction, and the decreased cost of operating the road, from year to year, gives evidence of the wisdom of the expenditures.

"Much still remains to be done to put the property in first-class order—the main items of necessity being new rails on the older portions of the road, several new bridges, and the completion of the work of filling the trestles, all of great importance. The road-bed is in excellent order, and the rolling stock in good repair; several of the locomotive engines are so worn out as not to be worth rebuilding, and all are too light to do the business on the western portion of the road economically. True economy demands the purchase of at least two heavier engines, which should be ordered for delivery in time for the autumn business."

The earnings and expenses for the period of the receivership, from April 5, 1876 to March 31, 1880, were as follows:

	Gross earn.	Expenses.	Net earn.
1876–77	$384,569	$256,846	$127,723
1877–78	408,483	270,608	137,875
1878–79	420,796	256,807	163,959
1879–80	466,519	277,250	189,269
Total	$1,680,337	$1,061,511	$618,826

Interest	$2,649	
Taxes and insurance	34,080	
Interest on Wilmington Bridge bonds	63,000	
		99,729
Balance, profit		$519,096

From this balance the receivers have made payments amounting to $401,413, of which $265,930 was in liquidation of outstanding indebtedness of the company for special liens, unpaid labor, arbitration award to Edward Matthews, etc., all under orders of the Court. The other $135,483 was expended on the road and property, under the general policy stated above.

St. Louis Bridge Company.

This company acquired through foreclosure the great bridge over the Mississippi at St. Louis, built by the Illinois & St. Louis Bridge Company. It also works under agreement the St. Louis Tunnel Railroad, which forms the approach to the bridge at the St. Louis end. The report is for the year ending March 31.

Under the agreement the net earnings of the Bridge and Tunnel are now divided in the proportion of $\frac{9}{10}$ to the bridge and $\frac{1}{10}$ to the tunnel, up to $450,000, and all over this amount in the proportion $\frac{9}{10}$ to the bridge and $\frac{1}{10}$ to the tunnel. All the tables, statements and exhibits treat of the joint operations of the two companies.

The capital of the St. Louis Bridge Company consists of first preferred stock, $2,490,000; second preferred stock, $3,000,000; common stock, $2,500,000; a total of $7,990,000 stock. The first and only mortgage upon the property is for $5,000,000. The mortgage bonds and preferred stocks are in process of distribution among the former owners of the Illinois & St. Louis Bridge first, second and third mortgage bonds. The common stock is in the hands of the committee of reorganization in London. There are other charges, some of which are first liens, upon the bridge, extraneous to the first mortgage, amounting to $60,030, which arise from the cost of parts of the property, situated mainly on the right of way, which have been acquired but not paid for.

The earnings of the property were as follows:

	1879–80.	1878–79.	Inc. or Dec.	P. c.
Upper roadway	$163,511	$155,305	I. $8,206	5.3
Lower roadway	731,621	642,544	I. 89,077	13.9
Rents	2,565	3,040	D. 475	15.8
Total	$897,697	$800,889	I. $96,858	12.1
Expenses	504,860	539,485	D. 34,625	6.4
Net earnings	$392,837	$261,404	I. $131,433	50.3
Per cent. of expenses	56.24	67.37	D. 11.13	16.5

The net earnings were 7.86 per cent. upon the bonded debt, or 3.02 per cent. upon the total capital. Of the expenses $345,465 were actual working expenses, and $159,395 rents, pool deficiencies, new construction, etc. The upper roadway carries the highway traffic, and the lower roadway the railroad business.

The report says: "It was deemed expedient to defray all classes of expenses, inclusive of those for new construction or equipment (which properly belong to a capital account), out of the current expenses. The above aggregate represents, therefore, all disbursements of whatever kind, and on this basis the net earnings for the year were $392,837. It, however, the expenses incurred for new construction, etc., are added to the above, it will be seen that the properties actually earned the net sum of $421,272. * * * * During a considerable portion of the year the freight traffic was carried at very low rates. The railroad wars which were not entirely abandoned until late in the autumn affected the income of the bridge and tunnel to a great extent, and, as a consequence, for about six months of the year fully one-half of the freight traffic was carried for cost.

"The total number of loaded freight cars which crossed the bridge during the year amounted to 121,203—an increase of 16,074 over the corresponding period of last year. Of the total number of loaded freight cars there were:

Through freight	36,067
Local freight	85,136
	121,203

"The capacity of the bridge for the transportation of through freight is practically unlimited, while for the transportation of local freight it is limited only by the extent of its terminal facilities.

"There are three roads leading west to Missouri River points, which carry the largest portion of the through traffic to and from Eastern lines by way of St. Louis, to wit: The Missouri Pacific, the Wabash, St. Louis & Pacific, and the Chicago & Alton railroads. Of these three roads, the Missouri Pacific directs all its east and west bound traffic to be transferred across the river at St. Louis by the Carondelet Ferry, and the Chicago & Alton Railroad transfers its through freight over its own bridge at Louisiana, in Missouri, about 110 miles above St. Louis; so that the through business controlled by the Wabash, St. Louis & Pacific Railway constitutes almost the only through traffic which crosses the bridge. Assuming that each of these roads carries an equal amount of tonnage, it is evident that two-thirds of this, the most profitable part of the business, is for the present lost to the bridge. In connection with this, it must also be considered that the St. Louis, Iron Mountain & Southern Railroad has no connection as yet with the bridge, except by an expensive, round-about route, which can be availed of only in emergencies for freight business. In consequence of this want of connection, the bridge loses the valuable through traffic of the South and Southwest, especially cotton and live stock."

The income account of the Tunnel Railroad from Feb. 1, 1879, to March 31, 1880, was as follows:

Proportion of net earnings		$68,621
Interest on deposits		218
Total		$68,839
Dividend, April, 1879, and commission	$25,250	
" " 1880, " "	32,563	
		56,813
Balance, surplus		$12,026

The capital stock of the Tunnel Company is $1,250,000. The dividend of April 1, 1879, was 2 per cent.; that of April, 1880, was 2½ per cent.

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EDITORIAL ANNOUNCEMENTS.

Addresses.—*Business letters should be addressed and drafts made payable to* THE RAILROAD GAZETTE. *Communications for the attention of the Editors should be addressed* EDITOR RAILROAD GAZETTE.

Passes.—*All persons connected with this paper are forbidden to ask for passes under any circumstances, and we will be thankful to have any act of the kind reported to this office.*

Advertisements.—*We wish it distinctly understood that we will entertain no proposition to publish anything in this journal for pay,* EXCEPT IN THE ADVERTISING COLUMNS *We give in our editorial columns* OUR OWN *opinions, and those only, and in our news columns present only such matter as we consider interesting and important to our readers. Those who wish to recommend their inventions, machinery, supplies, financial schemes, etc., to our readers can do so fully in our advertising columns, but it is useless to ask us to recommend them editorially, either for money or in consideration of advertising patronage.*

Contributions.—*Subscribers and others will materially assist us in making our news accurate and complete if they will send us early information of events which take place under their observation, such as changes in railroad officers, organizations and changes of companies, the letting, progress and completion of contracts for new works or important improvements of old ones, experiments in the construction of roads and machinery and in their management, particulars as to the business of railroads, and suggestions as to its improvement. Discussions of subjects pertaining to* ALL DEPARTMENTS *of railroad business by men practically acquainted with them are especially desired. Officers will oblige us by forwarding early copies of notices of meetings, elections, appointments, and especially annual reports, some notice of all of which will be published*

THE MASTER CAR-BUILDERS' CONVENTION.

If the proceedings of the meeting which has just been held in Detroit are compared with those of the two or three conventions which have preceded it, the conclusion, it is feared, must be that there was a decline this year in the interest and value of both the reports and the discussions. The attendance of members was very much the same as at previous meetings, but the reports were fewer and shorter, and apparently the interest of those who prepared them was not enlisted in the work to the same extent that it has been heretofore. It is, perhaps, but natural that this should be the case. Good crops are not reaped every season, and no one can do his best all the time. Still, after making all due allowance, the fact must be admitted that, considering the great amount and importance of the work which this Association should do, it has only partly done what might reasonably be expected of it. To realize this, one has only to reflect on the enormous extent, importance and value of the interest which the car-builders represent. Railroad cars are now counted by hundreds of thousands, and their value can be estimated only in tens of millions.

It is, perhaps, not surprising then that some of the members should have asked themselves whether it was not possible to increase the efficiency of the Association in some way so as to do the work which needs so much to be done. With this end in view several measures were introduced and were discussed with considerable animation and—were laid on the table. Now, although this result might indicate that the consideration of the subject was altogether futile, yet it seldom happens that any man or association of men can have a topic of this kind presented to them from different points of view, and remain of exactly the same mind at the end as they were at the beginning. It is, therefore, thought that the agitation of this question has done some good, although it did not lead to any definite action.

Several distinct measures were proposed. The first was that the Association should solicit contributions from the railroad companies for its support; the second, that through a committee it should make a statement to the managers of railroads of its objects, and the work which it should and could do; the third, that railroad companies be requested to *send* representatives to the annual conventions, and that other officers besides car-builders be admitted; the fourth, that railroad companies be solicited to become members of or subscribers to the Association.

To the first proposition it was said that under the existing conditions, the Association was not in any special need of money, but had sufficient in the treasury to meet all current expenses for one or two years, and that until some means were devised for making a wise use of more there was no good reason for asking for it. To the second proposal very little other objection was made, excepting that it would be ineffectual, and that a circular, no matter how carefully prepared, would receive little attention from presidents and superintendents. While there may be some truth in this, yet there is no reason why such a circular might not be supplemented by other efforts to secure the attention desired. The third proposition, to admit other officers of railroads to membership besides car-builders, aroused a great deal of opposition; and it was evident that the members were fearful that their Association might thus be absorbed by persons who are quite outside of their occupation. To the fourth proposition very much the same objection was made as to the third, with the additional one that if asked the companies would not comply with the request.

Although the subject is worn very thread-bare, yet it may help to give a clearer idea of the effectiveness of these measures for accomplishing the purposes of the Car-Builders' Association if we review what the work is which it should aim to do.

In the first place we have in our country and in Canada nearly 100,000 miles of railroad equipped with nearly half a million of cars, a large proportion of which are interchanged with other railroads. In nearly all cases the cars of each road are constructed differently from those on other lines, and in many cases those of the same company are not alike. They differ in all their details, so that when repairs are needed distinct and separate parts are required for those of each road, or for each class of cars. At points on through lines where repairs are made, great quantities of duplicate parts must be kept on hand, and the expense and time for making repairs is thus very much increased. All these facts are well known in a general sort of way, but it is impossible to make them appear very forcible unless the actual figures could be given, as they might be if any one would take the trouble to visit any point on a through line like Pittsburgh, Buffalo, Albany or Chicago, where the cars that are interchanged are inspected and repaired. It would probably surprise many railroad officers if a list were made of the variety and quantity of the parts which must constantly be kept stored up and on hand at such places. It should be kept in mind, too, that the cars at such places usually cover many acres of ground, and that the time consumed in procuring the right pieces which must be replaced is often greater than that required to do the work, and some idea may thus be found of the great waste of time and money which is occasioned by their want of uniformity.

Besides this source of expense, the cost of maintaining cars will be reduced very much if they are all alike, from the fact that the different parts in their construction would then become staple articles of merchandise. Thus, if the Car Builders' standard axle was generally used, all axle manufacturers when not employed on orders would run their works in making such axles, and thus accumulate a stock for which there would be certain to be a demand sooner or later. If that were the case, there would be an accumulated stock on hand to supply the want whenever the business of railroads required an increase of equipment. The effect would be to equalize prices. The same result would follow with car-wheels, draw-bars, journal-bearings, springs, and in fact, all the castings, forgings and other materials used in the construction of cars. If these were made of uniform patterns there would soon spring up establishments equipped with special tools and machinery for the manufacture of the different parts, and which would furnish them of better quality and at lower prices than it is possible for railroad companies to make them in their own shops. This has already been illustrated in the manufacture of taps and dies, which at present no railroad company can afford to make and compete with the establishments which make a specialty of these tools. Let it once be known that there will be a constant and certain demand for journal-boxes, centre-plates, and the multitude of other castings used about cars, and there would soon be foundries equipped with moulding-machines and other special appliances, which would furnish them at prices much below that of their present cost to railroads. This is now true of car-wheels, and it is only in very exceptional cases that these can be made in competition with firms specially engaged in the business. The difficulty which a railroad company must have in conducting any complicated manufacturing establishment economically is so great that it is desirable to diminish as much as possible this branch of their operations. The proper work of a railroad is the transportation of freight and passengers, and the only good reason there is for such corporations engaging in manufacturing is the impossibility of having their work done for them as cheaply as they can do it in their own shops. The more manufacturing a railroad company does, the greater is the complication of its business and the probability of wasteful management. Any system then which will simplify its operation makes it more probable that a railroad will be economically managed.

For another reason, too, is uniformity very desirable. The sacrifice of life and limb on railroads is now horrible to contemplate, and shameful to those who are responsible for it. Much of this is preventable and is due to the diversity in the the construction of cars. Here the Car-builders' Association has accomplished a great deal of good in establishing a uniform height of draw-bar, but there are many other reforms which need to be generally adopted, and which would protect the lives and the limbs of train-men. It is of the utmost importance for the safety of train-men, that the position of the brake-shafts and wheels and car-ladders, the size, position and arrangement of buffer and dead-blocks, the framing of the ends of cars, and the plan of draw-bars should all be made uniform.

But it must be remembered, too, that it is not uniformity alone which must be regarded. It is true that in many cases it is not at all vital what special form or proportion of a given part is adopted, the essential thing being that all should agree on one pattern, *agreement* being the essential thing and not perfection. Thus, a car axle with a journal of either 3½, 3¾ or 4 in. diameter would give good results in practice, as has been abundantly shown; yet so long as such diverse sizes are used uniformity in journal-bearings is impossible, and therefore the essential thing to do is for all to come together and agree to use one and the same size. In the matter of a standard draw-bar, though, the case is not so simple. Here it is of the utmost importance that the best plan should be evolved before agreeing upon anything, and uniformity must be subordinate to perfection or a reasonable degree of it. The work to be done in this and in other cases is to determine what is the best form of construction before coming to an agreement.

This being the legitimate work of the Car-Builders' Association, the question arises, why is it that it is not able to do it more effectually. The answer to this might be made generally, that it is owing to the fact that the Association is entirely independent of those who are supreme in authority over such matters. It is composed of individuals, who as such hold positions of master-car-builders on the roads with which they are connected, but the Association is a voluntary organization, holding no power from and owing no allegiance to the managers of railroads, excepting that which is due from each member to his superior officers. Quite naturally, then, those who can exercise little or no influence over the deliberations and actions of the Association do not feel under any obligation to be governed by what it does or to follow its recommendations, and it must be admitted and regretted that generally they take very little interest in its proceedings or its existence.

The framers of the constitution of the Association seem to have had in mind the idea that the members should be such by virtue of an appointment from those in authority above them, because the first section of Article III. of the constitution says: "The members of the Association shall consist of master car-builders, and foremen of railway car-shops, *whose names may be presented by their superior officers*, and railway superintendents." Whether the latter clause means that railway superintendents may be members, or merely that they may present the names of their master car-builders, is not apparent from the context. It seems, though, that the originators of the Association contemplated, and the constitution says, that to become a member a car-builder must have his name "presented by his superior officers." It is doubtful whether one-half of those whose names are on the roll have complied with this condition. What it means, though, and what was meant by the originators of some of the measures which were laid on the table in Detroit, was that the Association should be the instrument and subject to the control of the "superior officers." It is believed that if the measure which was proposed, contemplating the appointment of a committee to prepare a full statement of the

objects of the Association, to be presented to the superior officers, had been adopted, and they had been invited to send representatives to the next convention, it would have met with general favor. The position which the Association will be obliged to assume, if it ever accomplishes its purposes, is to say to those who hold and exercise authority in the operation of railroads: Our organization is intended "for the discussion of all matters pertaining to car-building and repairing;" you are requested to send one or more representatives through whom you can exercise a proportionate influence in its deliberations; and if the latter are not such as will commend themselves to you, it will be because the representatives you send are deficient in ability, experience and skill, which will be your fault alone. If the managers of railroads could be induced to send their deputies, the certain result would be that they would feel more interest in the proceedings than they now do, and its influence would be very much increased. Separated as it is now from all control of those who have the responsibility of the management of railroads, it is regarded by many of them as an occasion for recreation and convivial enjoyment, and little else. This view does injustice to the Association and many of its members, but it is impossible to make it appear otherwise to those who hold it, without leading them to assume some closer relation to the organization.

FAST TRAINS FROM CHICAGO.

What may be called the "solidarity" of railroad interests has been well illustrated by the recent action of the Baltimore & Ohio in putting on a fast train from Western cities to Baltimore. This company now owns a line from Chicago to Baltimore, and controls one from St. Louis and Louisville, *via* Cincinnati, to Baltimore. From the three last-named cities its line is the shortest to Baltimore, and about as short as the Pennsylvania's to Philadelphia and New York. From Chicago its line is 853 miles long to Baltimore (*via* Washington, which is the route of the through trains) against the Pennsylvania's 801, and to Philadelphia and New York it is 123 miles longer than the Pennsylvania's line. It has had, we believe, only a moderate share of the traffic even to Baltimore, and a very small share of the New York travel. A leading attraction of its route to people traveling for pleasure has been the fact that it passes by way of Washington, and it has very beautiful scenery on its line. But it has, we believe, never cultivated a through passenger traffic as the other lines have done. It is comparatively recently that it has had full control of its lines west of the Ohio, and the travel thence is more to New York and New England than to Baltimore, to which places, except from points near the Ohio River, its line is longer than some others which have been longer in the field and are better known.

When this company put on a fast train from Chicago, making such time to Baltimore that passengers could get to New York by this route (1,035 miles) nearly as soon as by the other and shorter trunk lines, it was generally reported that the object was to get a larger share of the New York traffic. The Baltimore & Ohio managers, however, give another and a reasonable explanation of their policy. They have now a great system of roads west of the Ohio, covering a large territory and reaching as far west as Chicago and St. Louis. To the places on the line from St. Louis to Baltimore it is the shortest route to Baltimore. But there are very few large towns on these lines. From St. Louis to Cincinnati there is none of importance, and its passenger traffic must be collected to a great extent from St. Louis, Louisville, Cincinnati Columbus and Chigago, and from the roads terminating at these places. There is hardly any important road in the same territory that has so few stations so important as to make it necessary to stop express trains at them. On this account, it can run trains through at a quite moderate running speed and yet make good time by avoiding stops. This is what it purposed to do—and is doing. It claims that it has never yet had the proportion of traffic from the Ohio valley and vicinity which its position as the short line would secure for it, other things being equal; and it intimates that heretofore other things have not been equal, but its rivals have offered superior attractions which it now proposes to match. But a part, at least, of the advantage of the fast train must be felt by the Chicago line, because for about half their length the routes are one.

Now the trunk lines would hardly have any reason to complain of this policy in itself; but it at once made it impossible for them to retain their old arrangements. The Pennsylvania might look with indifference on the better time made by the Baltimore & Ohio to New York, because it was still ahead on that route; but it could not afford to be beaten into Baltimore and Philadelphia, at least from Chicago, from which its routes are the shortest ones. It also has a large Baltimore and Washington traffic from all the places in the west reached by the Baltimore & Ohio, and must protect that business. So it put on a fast train; but when it reduces its time to Philadelphia, it necessarily shortens it to New York also, and with a 26-hour train by the Pennsylvania Railroad between Chicago and New York, the more northern routes were at a disadvantage with their 36-hour trains, and so what begun with the shortening of the time on the Baltimore & Ohio has resulted in the establishment of fast trains by all the lines between Chicago and New York—the substitution of 30-hour for 36-hour trains.

But this is by no means the end of the matter. The times of the old trains have been settled for many years, and the whole system of connecting roads in the West has adjusted its through trains to suit them. For a great many years the most patronized passenger train from Chicago to the East has left by all the lines at or about 5:15 p. m. Trains from Kansas City, St. Louis and St. Paul run to connect with this train. To change its leaving time upsets all these arrangemeets, yet this must be changed if any good is to be got out of a 30-hour train. The arrival in New York should be either about bed-time, or about getting-up time. By the old arrangement the passenger reached New York at six or seven o'clock in the morning, and so had the whole day before him. If this arriving time had been maintained, a thirty-hour train would have had to leave Chicago after midnight—an inconvenient hour for Chicago people, and for all arriving from places beyond Chicago. By making the arriving time 9:30 and 10 o'clock p. m., the trains are able to leave Chicago at 3:30 p. m. Naturally, trains of roads west of Chicago planned to connect with a 5:15 train to the East do not connect with a 3:30 train. The train from Omaha, for instance, arrives a little late to connect with a 3:30 train, and so, if the new 30-hour train is to get the bulk of the travel that formerly sought the 5:15 train, there must be another series of changes in time schedules west of Chicago.

Now if all the passenger traffic from Chicago to the East originated at Chicago, there would be little advantage in shortening the time to New York from 36 to 30 hours. The passenger starting at 5:15 loses very little of the day he starts, and is but one day of working hours on the road. If the time was reduced to 24 or 26 hours, he would have the advantage of a night's rest in a bed instead of his more or less unsatisfactory rest in the berth of a sleeping car, but would even then save no daylight hours. Chicago and St. Louis people, however, are very well accommodated by the present arrangement, by which they are two nights and one day or two days and one night on the road. But the city traffic is by no means the largest part of the whole. The whole West has been largely peopled by emigrants from New England and the Middle States, and there is in the aggregate a very large movement of these emigrants between their new and their old homes, this forming a very large proportion of the whole through passenger traffic. It is not so very long ago that the bulk of this transported population, as we may call it, was in Ohio, Michigan, Indiana, Illinois and Wisconsin. But now these states are largely filled with the children of these original settlers, who have comparatively few attachments to bring them back to the East, while the states further west—Minnesota, Dakota, Iowa, Nebraska and Kansas—have scarcely any native population, but are filled with emigrants from New York and New England and the older Western states. These are the people who now make frequent visits to the East, and it is for them fully as much as for the population in the immediate vicinity of Chicago and St. Louis that the running times of trains now need to be arranged. Many claim that insufficient attention has been paid to this Western traffic and that a modification of the time of trains connecting with the chief Western roads ought to be made in its interest.

From what has been said above, however, it is evident that a change of any kind makes so many complications and disturbances that it will be a work of great difficulty to bring about one that will be generally satisfactory. The Western roads out of Chicago complain that the change made by the trunk lines this week, by which a 30-hour train leaves Chicago at half-past three, was made without consulting them or due deference to their wishes, and as they supply most of the traffic which will be most benefited by a fast train, they certainly should receive a good deal of consideration. Probably, however, the trunk lines had in mind the adjustment of their trains to the innovation of the Baltimore & Ohio rather than a permanent arrangement; if this is so it is a trunk-line affair to which the Western roads need pay very little attention. A permanent arrangement, however, should be made by the co-operation of the Eastern and Western roads, as it is especially the residents on the lines of the Western roads that will make use of the trains and for whose convenience they should be planned.

It is quite uncertain whether the present arrangement will endure. Even if carefully planned and intended to be permanent, it is more than probable that experience would show that it could be modified in some particulars with advantage. But however the matter may turn out this season, it seems quite probable that the time is close at hand when a modification of the long established train schedules between Chicago and the East will have to be made, chiefly for the accommodation of the large and rapidly growing population west of the Mississippi. If at the same time it could be made advantageous to the great Western cities, and especially Chicago, which is the great centre of Western passenger traffic, such a change will warrant some sacrifices. For this purpose a 26 or 28 hour train would be much more advantageous than a slower one, however, leaving Chicago not earlier than the old Atlantic expresses (5.15), and arriving in New York in time to get to bed early enough for a full night's rest the next day. But even a 30-hour train requires an average speed of 32 miles an hour, including stops, by the northern lines, and to run faster would be expensive; and then St. Louis would be put at a disadvantage, which, though due to its greater distance from the East, would probably cause trouble with some of the St. Louis roads. St. Louis now has virtually the same time as Chicago, and its already fast trains could not be made to equal the time of a 26 or 28-hour train from Chicago, and the latter city would have an advantage that it does not now possess for the Kansas and other Southwestern travel.

AMERICAN RAIL CONSUMPTION.

We reached last year, for the first time, data sufficient to form an approximate estimate of the percentage of rails in track annually renewed in the United States for a series of years, though before we had sufficient information to prove that in spite of heavier traffic, there had been for years a quite rapid decrease in the percentage, indicating a gradually increasing average life of rails, which of course was to be expected from the introduction of steel rails. Of course we cannot tell exactly what proportion of the rails in use are of steel; because we have no means of knowing how many steel rails have had to be renewed. It is to expected, however, that the consumption of steel for the renewal of steel will increase hereafter, because a larger and larger number will have been in the track long enough to be worn out. Now the thing which makes all calculations uncertain is the lack of information as to the amounts used yearly for new second tracks and sidings; but on the whole, the data at hand seem to show the tendency of the average life of rails with reasonable accuracy. The extremely valuable report of Mr. James M. Swank to the American Iron & Steel Association (the part of which on rail production and consumption we published last week) enables us to continue our examination through another year.

The great obstacle to the ascertainment of the tonnage of rails in tracks at any given time, and consequently of the average life of the rails, has been the lack of accurate statistics of the mileage of second track and sidings of American railroads. It is only recently that Poor's Manual began to tabulate this mileage, and, as usual at the beginning of such a statistical inquiry, the first reports were very imperfect. How imperfect may be judged by the fact that the issue of 1878 showed 260 miles *less* of such tracks than the issue of 1877. On the basis of the figures reported for 1878, we last year revised all our figures for the average life of rails; but the issue of 1879 showed so tremendous a change in this mileage of accessory tracks again that a further revision is become necessary. While in 1878 the length of these tracks was reported to be 18,100 miles, in 1879 it was 22,817 miles, an increase of 4,717 miles; and as 2,916 miles of new *road* were constructed that year, this gives a total of 7,633 miles of *track* added that year. Now such an addition of track would have required about 730,000 of the 882,695 tons of rails consumed that year, leaving but 152,700 tons for renewals, which would be absurdly insufficient—only about 1¾ per cent., arguing an average life of nearly 60 years. The explanation is, doubtless, that the latter figures for accessory tracks approached completeness, while the earlier ones were quite far from it. We therefore base our calculations on the figures for 1879, according to which the tonnage of rails in tracks at the beginning of the year was 10,215,000, and going back from this data, and subtracting the tonnage used each year for new roads, on the basis of an average of

103 short tons for standard-gauge and 64 tons for narrow-gauge roads (including the sidings, etc., of the *new* roads), we have the following consumption for maintenance and construction separately and the total number of tons in tracks at the beginning of each year for nine years :

	Consumption of Rails.			
	Total.	In construction.	In maintenance	Aggregate in tracks Jan. 1.
1872	1,530,850	740,500	790,350	7,942,500
1873	1,148,849	392,000	756,849	8,683,000
1874	837,695	192,000	645,695	9,075,000
1875	810,770	151,000	659,770	9,267,000
1876	879,916	231,000	648,916	9,418,000
1877	784,744	206,000	558,744	9,649,000
1878	882,695	360,000	522,700	9,855,000
1879	1,157,420	440,000	717,420	10,215,000
1880				10,655,000

Having here the tonnage of rails in the tracks at the beginning of each year, and the tons used for maintenance in that year, we find, by dividing the latter by the former, that the *percentage* of rails renewed each year has been :

Year.	Per cent.	Year.	Per cent.
1872	9.95	1876	6.89
1873	8.66	1877	5.79
1874	7.12	1878	5.30
1875	7.12	1879	7.02

The weak point here is the lack of information as to the quantity of rails used for new accessory tracks on old roads, which included above in the quantity required for maintenance. It should be borne in mind, however, that the data are based on the statistics of 1879, and that the error on this account extends backward from that year with an increasing ratio, so that the number of rails in tracks in the earlier years is too great, and the percentage of renewals therefore too small. But if this were corrected, the progress in increasing the average life of rails would be *greater* than is shown by the above, so that the *tendency* is not only in the same direction, but more rapid than our figures indicate.

But last year a sudden change is seen, and the percentage of renewals suddenly rises from 5.30 to 7.02, although at the beginning of the year most of the tracks in the country that carry a heavy traffic were steel, and therefore should be expected to last longer than in earlier years. It has been often said in explanation of the great demand for rails in the latter part of last year that the railroads were so poor that they had for years postponed making needed renewals until they had the work of several years to do all at once, as it were. We hardly need say to our readers that this was by no means generally true. The roads with heavy traffic in this country have made more progress in improving their roads and tracks since their earnings fell off after 1873 than ever before. They never before felt so strongly the necessity of a first-class track to economical operation. A neglect of tracks for a few months even will increase the working expenses to such an extent that the stupidest manager cannot overlook it. Nevertheless, there doubtless were many roads, mostly with a thin traffic and on which the poor iron laid in 1873 and before had been growing poorer and poorer, though still serviceable for a thin traffic, which required extensive renewals in 1879, and not until 1878 had had sufficient earnings to permit them to be made as fully as they ought to be. Further, no doubt, the renewals of *steel* rails necessary become greater and greater every year, as until very recently there had been very few in track as long as the average life of good steel. But it is known that very considerable purchases were made last year to renew worn-out steel rails, and purchases on this account will probably increase hereafter until the average wear is made good each year. This doubtless has not been done generally heretofore, though most of the roads that use steel have kept their tracks perfectly maintained. This may seem like a paradox, but it is perfectly reasonable. If a road a thousand miles long with an even traffic over all parts of it had been laid with steel having an average life of ten years eight years ago, it would have required but trifling renewals up to this time, though 80 per cent. of the life of the rails would have been consumed; nearly the whole track would have to be renewed within the next three or four years. We believe that there is little doubt that the renewals of roads with heavy traffic—indeed, all roads whose tracks are largely steel—have been less for some years than will be required on the average, for just this reason. It is only when the substitution of steel for iron has been very gradual that the renewals of the steel are likely to be equally distributed over successive years. When once the railroads generally have been laid with steel (where steel is economical), then, shortly, in the aggregate, the renewals doubtless will represent the average wear.

But another cause of the fluctuation of the percentage of renewals as given above is our unknown quantity, the tonnage used for new accessory tracks of old roads. Of these, all we can say is, that such additions are likely to be much greater in years of heavy traffic and earnings than at other times, and that most roads in this country were rather over than under-supplied with such tracks in 1873, and for several years needed very few additions. The constructions of this kind on the trunk lines have been very small since 1873 until the Erie, after its reorganization, laid its third rail and completed its double track between New York and Buffalo. And most of the immediate connections of the trunk lines made few additions of this kind until the heavy traffic following the crop of 1877 began to crowd some of them. Since that time much has been done by the Michigan Central and the Fort Wayne roads. A good deal, too, has been done upon Western roads, chiefly in adding sidings and short sections only of second track. In all probability the consumption for these purposes in 1879 was much larger than ever before. The difficulty is that we do not know how much.

There have been laid up to the close of 1879 about 3,400,000 short tons of steel rails in the tracks of American railroads,—enough for 34,000 miles of track. The quantity laid since 1873 has been 2,700,000 tons, and it is reasonable to suppose that at the beginning of this year there were 3,000,000 tons still in the tracks, or about 28 per cent. of all the tracks. The tracks laid with steel are almost universally on those lines and parts of lines where traffic is heaviest, and probably to-day two-thirds and perhaps three-fourths of all the *traffic* of the country is carried over steel rails. The enormous effect they have had and will continue to have in keeping down the average renewals is shown better by the percentages for the three or four years previous to 1879 (averaging 6 per cent.) than by that for 1879 (7 per cent). But even the latter shows a long average life, fully 14¼ years. As steel rails take the place of iron on the roads with thinner traffic also, this average life will still further increase.

Another reason why the quantity of rails not used in constructing new roads (and which we have credited to maintenance) was a larger percentage of the rails in tracks in 1879 than heretofore may be found in the fact that production and importation were much the heaviest in the latter part of the year, and largely at a time when few renewals are made, so that in all probability the stock on hand was much larger at the close of 1879 than at the close of 1878. Mr. Swank credits to consumption the sum of the production and importation, and in the long run this is perfectly correct. But evidently it must be erroneous to some extent, and may be to a considerable extent, for any one year. Rails are not consumed frequently for months after they are produced, and very few of the rails produced or imported in the winter are put into the tracks until spring. But all these errors are adjusted when we take the average consumption for a series of years.

Until last year the tendency in this country seemed to be toward the universal substitution of steel for iron. The difference in price, which at first was very great, had been reduced to about seven or eight dollars a ton in this country, while abroad it was frequently only a dollar or two. The production of steel increased steadily year after year, and the production of iron decreased as steadily. The steel works were generally busy in the dullest of times, but many of the iron rail rolling mills had little or nothing to do. But with the revival of the demand for rails, the steel works were unable for a time to supply the requirements, and prices rose so high that iron rails could be made at a profit for so much less than the selling price of steel as to tempt buyers, especially those purchasing for new roads, with no prospect of a heavy traffic for years. For such roads good iron may be the most economical when it is much cheaper; and though at the beginning of 1879 iron was but seven dollars a ton cheaper than steel, at the close of that year it was seventeen dollars cheaper, and now is about fifteen dollars cheaper. So we find the consumption (production and importation) of steel and iron rails to have varied as follows, since 1870:

Year.	Iron	Steel.	Total.	Per cent. of steel.
1871	1,252,483	88,951	1,341,434	6.64
1872	1,286,994	243,856	1,530,850	15.94
1873	860,283	288,586	1,148,849	25.11
1874	592,265	245,459	837,724	29.30
1875	503,591	307,179	810,770	37.92
1876	467,455	412,461	879,916	47.10
1877	332,540	432,204	764,744	56.54
1878	327,890	559,805	882,695	63.49
1879	439,250	718,170	1,157,420	62.09

From less than 7 per cent. of the whole in 1871, the consumption of steel increased to 63½ per cent. of the whole in 1878 ; and from 1872, when the consumption of steel first began to be considerable, to 1879 the consumption of it increased three-fold nearly, while only a quarter as many iron rails were used in 1878 as in 1872. But from 1878 to 1879, while the increase in steel consumption continued, and was indeed greater than ever before (28.3 per cent.), iron consumption not only ceased to decrease, but increased faster than steel consumption (36 per cent.), and the latter was 62 instead of 63½ per cent. of the whole rail consumption.

In considering this change, it must be remembered that when the demand for rails became active, the limited number of steel works, all but one of which were in operation, soon had more orders than they could fill, while on the other hand, there were many idle rolling mills ready to accept orders for iron rails. Indeed, as this country once produced 906,000 tons of iron rails, it must have been easy to get 420,000 manufactured last year, even though it was a third more than the production of 1878. Doubtless the heavy demand during the first half of this year has caused a still further increase in the production of iron rails, while the high prices, and especially the lower duty on iron, have caused very large importations of iron rails this year. But it will not be safe to conclude that a permanent demand for iron rails has set in. Experience, especially in Europe, indicates that under ordinary circumstances the steel works will furnish rails for very little more than the price at which iron rails can be afforded, and that, therefore, the present and especially the recent difference in the prices for the two metals will be only temporary. Should it become as little as it was at the beginning of 1879 in this country, not to say abroad, then the demand for iron will be sure to dwindle and nearly disappear.

Record of New Railroad Construction.

This number of the *Railroad Gazette* contains information of the laying of track on new railroads as follows:

Danville, Olney & Ohio River.—Extended from Westfield, Ill., south to Casey, 10 miles. Gauge, 3 feet.

New York Central & Hudson River.—The *Cross-town Line* in Buffalo, 1 mile, has been completed.

Chicago, Burlington & Quincy.—A branch is completed from Albia, Ia., southward to Moravia, 12 miles.

This is a total of 23 miles of new railroad, making 1,613 miles thus far this year, against 682 miles reported at the same time in 1879, 432 miles in 1878, 583 miles in 1877, 687 miles in 1876, 312 miles 1875, 570 miles in 1874, and 1,271 miles in 1873.

BARON VON WEBER was entertained last Wednesday afternoon, at the St. Nicholas Club in New York, at a dinner given to him by a little company of engineers and railroad men. But, probably, few of the engineers there assembled (owing to the difference in language) knew to how great an extent their profession is indebted to him for the advocacy of its recognition as one of the liberal professions in society and the state. In reading his publications bearing on this subject, in which he contrasts the position of German engineers with that of English and French engineers, much to the disadvantage of the former, we are struck with the fact that the development of the profession, and its present position even, in this country is so much like what it has been in Germany, and so much less like what it has been in England, which has naturally set us the example in so much that concerns the practice of the profession. In Germany, as here, the profession has been largely created by the introduction of railroads. Our public works before that time had been too few to develop a considerable class of well-established engineers, recognized in the community as such. Here as there it was long a *parvenu* profession, for which there was no recognized course of training or standard of acquirements, and into which men made their way with all degrees of culture or no culture at all, very many of whom had nothing more than the skill in performing a certain narrow range of services, such as comes from imitation and repetition, and is characteristic of a trade rather than a profession. It was hardly to be wondered at, that a calling filled up largely with men of such capacity should receive little recognition or honor in the community. And when at last attempts were made to provide special training for engineers, the mistake was made in Germany as here, of prescribing an almost purely technical course of studies, which might give the candidate an excellent supply of the peculiar knowledge needed for his special work, but very little of the general training which has always been thought necessary as a preparation for beginning the study of the other learned professions, and which certainly broadens a man's mind and leads him to appreciate the great currents of the world's life outside of the narrow range of a single calling, and enables him to have an influence on them, however little it may affect his skill in designing, executing or operating structures or machinery. When these things are considered, together with the fact that the influential classes in the community have a strong tendency to resent the introduction of a new calling to equal standing with them, and look upon it as an intruder, it is hardly to be wondered at that the profession is not better recognized by the public, and that eminence in it does not more often lead to positions of influence in society and the government. In France to-day the Prime Minister and one of the members of his cabinet are engineers, and there are numerous representatives of the profession in the national legislature, and these are only illustrations of the regard in which the profession is held there, which, too, it has justified by showing that its members are able men as well as skillful practitioners of their special calling, and able to appreciate and to sympathize with everything that goes to make up the national life, art, literature, learning and society, no less than production. That Weber, as the son of a composer of universal fame, one of the world's great artists, and as such from boyhood naturally

receiving the attention and favor of the ruling classes in the European capitals where his father had been almost worshipped, should have selected engineering as a calling was in itself an indication that a new profession had made its appearance; and his work since, his eloquent writings on subjects which are of public as well as professional interest, and his other purely literary work, have done much in Germany to prove that engineering may be truly a *liberal* profession; and not a little of his writing has been specially designed to show that it should be made so, and that as such it should have large influence in the community in leading and guiding the work of civilization.

A SOUTHERN RAILROAD COMBINATION is reported to have been made through a syndicate, the operations of which will cover nearly the same ground as those of the old Southern Railway Security Company. Among the members of this syndicate are said to be Thomas Clyde, of Philadelphia; John and Daniel K. Stewart, of Richmond, Va.; W. T. Walters and B. F. Newcomer, of Baltimore, Md.; H. B. Plant, of Augusta, Ga; R. T. Wilson & Co., of New York; Charles M. McGhee, of Tennessee; W. B. Clyde, of New York; William H. Palmer, T. M. Logan, James T. Gray, A. Y. Stokes and Thomas Branch & Co., of Richmond, Va., and other well-known gentlemen in the South and Southwest. These parties already control the East Tennessee, Virginia & Georgia, and the Memphis & Charleston; the Richmond & York River; the Savannah, Florida & Western, and they have recently bought under foreclosure the Savannah & Charleston, the Greenville & Columbia and the Selma, Rome & Dalton roads. They also expect to control, through the East Tennessee, Virginia & Georgia, the Atlantic, Mississippi & Ohio, as soon as the reorganization of that company is completed. They are said to be negotiating for the control of the Wilmington & Weldon, the Wilmington, Columbia & Augusta and the Northeastern roads, forming the Coast Line from Weldon to Charleston. And finally they have arranged, it is said, to buy the Pennsylvania Railroad Company's interest in the Richmond & Danville, thus securing control of that road and the Charlotte, Columbia & Augusta. The recent purchase of the Western North Carolina is said also to be in the interest of this combination.

If this syndicate has really made the combinations reported, it will have substantial control of all the Southern railroad system east of the Louisville & Nashville lines, and north of those of the Central of Georgia, with a line reaching down into Florida and Southwestern Georgia, and another touching the coal and iron region of North Alabama, and stretching well down into the cotton belt of that state. The whole business of North and South Carolina will be under their control, and they will have not only all the land lines but all the principal steamship lines from Northern ports to Charleston, Savannah and Florida. The Atlanta & Charlotte Air Line is not mentioned as included in the combination. If left out it will be completely isolated, unless the Virginia Midland should be able to build its proposed extension to Charlotte, which would, indeed, be almost a necessity to it, for it would be cut off completely at Lynchburgh and Danville from all through business. But the Air Line has always been worked in very close connection with the Richmond & Danville, and indeed, was built for that purpose. Further developments relating to this syndicate will be looked for with much interest.

MAY EARNINGS, so far as reported up to this time, make an excellent showing, though one not quite so favorable as made by April earnings. For the last-named months our table published June 4 showed an increase in the aggregate earnings of 56 roads of 27.3 per cent. over their last year's April earnings. For May, the *Commercial and Financial Chronicle's* table, having reports for 44 roads, but with only three weeks' earnings for ten of them, shows an increase of 23.8 per cent. Of these 44 roads only two show a decrease, in each case trifling less than 2 per cent. on the Cleveland, Mt. Vernon & Delaware, and ⅜ of 1 per cent. on the Iowa lines of the Illinois Central. The Central Pacific shows a large increase—9.6 per cent.—for the first time for several years. Several Western and Southwestern roads that have hitherto reported astounding increases report more moderate ones for May than for many months previous. The Missouri, Kansas & Texas increased 84.1 per cent. in April and but 26.1 per cent. in May; the St. Louis, Iron Mountain & Southern, 26.7 per cent. in April and 45.2 in March against 23 per cent. in May. The earnings on trunk-line traffic seem to have increased less in May than in April, though the data are not quite certain and in some respects are contradictory. The New York Central's increase is but 15.4 per cent in May, against 25.6 in April, and the Cleveland, Columbus, Chicago & Indianapolis has an increase of 16.4 per cent. in May against 27.1 per cent. in April. On the other hand, the Great Western, which depends perhaps more than either on through traffic, shows an increase of 23.2 per cent. in April against one of 17.2 in May, and the Grand Trunk's increase was substantially the same in both months. The effect of lake navigation in diverting shipments from the through lines south of the lakes seems to have been less in May than in April; at least the Toledo, Peoria & Warsaw's *decrease* of 17.9 per cent. in April is turned into an *increase* of 10 per cent. in May, and the main line of the St. Louis, Alton & Terre Haute added further to its tremendous increase of 50.6 per cent. in April, making it 57 per cent. in May. The great advance in lake rates is favorable to roads like these, but it did not come early enough to have its full effect in May. On the other hand everything was as favorable as possible to these roads last year until after harvest—indeed, pretty much throughout the year—so that their increase now is especially encouraging.

WORKING EXPENSES now promise to be not quite so great as they seemed likely to be in the winter and early spring, owing to the great fall in iron and general decline in other materials. The summer work, however, will doubtless be chiefly done at the high prices which prevailed recently. The change in the circumstances gives peculiar interest to reports of expenses. We have compiled these for eighteen roads, most of whose returns include the four months from January 1 to and including April. These eighteen roads' earnings increased in the aggregate from $31,552,809 to $40,004,163, or 26.8 per cent., their expenses from $20,489,585 to $23,652,856, or 15.4 per cent., and their net earnings from $11,063,224 to $16,351,307, or no less than 47.8 per cent. It is probable from this, which includes important roads in different parts of the country, such as the Erie, the Pennsylvania, the Chicago, Burlington & Quincy, the Louisville & Nashville, the Chicago & Alton and the Grand Trunk, that the expenses per unit of traffic are even less this year than last, notwithstanding higher wages and prices of materials. It must be remembered that a large part (doubtless the largest part) of the reduction in cost of transportation within the past few days has been the result of improvements in the management of the roads, and of more powerful locomotives. Now these usually cannot go into effect all at once, and in the case of locomotives progress is usually very slow, because the roads procure new and improved locomotives only as fast as the old ones wear out. A very large number of roads will show larger average train-loads this year than ever before. In many cases this further introduction of such improvements will much more than neutralize the advance in prices, even where traffic is about the same in amount, and where the traffic is much larger, there will be a material reduction in the average expense per unit of traffic. Moreover, the revival of manufactures, and the greater prosperity causes a much larger movement of merchandise westward, which is carried without any increase in the train movement and very little in the expenses.

WATER RATES have all changed during the past week. Lake rates, which Wednesday of last week were 7½ cents a bushel for corn and 8 for wheat from Chicago to Buffalo, rose still further a quarter of a cent, and maintained these extraordinary high figures until Tuesday, when the telegraph reports only 7 and 7½ bid and 7½ and 8 asked. Wednesday 7 and 7½ were the rates accepted.

Canal rates advanced half a cent after Wednesday of last week to 6½ and 7 cents per bushel from Buffalo to New York, and on Tuesday of this week a further advance to 6¾ and 7¼ was reported.

Ocean rates are higher, the ruling quotation for grain by steam from New York to Liverpool having been 5d. per bushel for some days, against 4d. a week ago and 3d. two weeks ago.

General Railroad News.

MEETINGS AND ANNOUNCEMENTS.

Meetings.

Meetings will be held as follows:

Louisville, New Albany & Chicago, special meeting, at the National Bank of Commerce in New York, June 21, at noon.

North Carolina, annual meeting, in Greensboro, N. C., July 8.

Wabash, St. Louis & Pacific, adjourned special meeting, at the office in St. Louis, July 14.

Dividends.

Dividends have been declared as follows:

Western Union Telegraph, 1¾ per cent., quarterly, payable July 15.

Metropolitan Elevated (leased to Manhattan Company), 2½ per cent., quarterly, payable July 1.

New York Elevated (leased to Manhattan Company), 2½ per cent., quarterly, payable July 1.

Georgia, 3½ per cent., semi-annual, payable July 15. This company increases from 3 to 3½ per cent.

Philadelphia, Wilmington & Baltimore, 4 per cent., semi-annual, payable July 6.

Fitchburg, 3 per cent., semi-annual, payable July 1.

Old Colony, 3 per cent., semi-annual, payable July 1.

Boston, Revere Beach & Lynn, 3 per cent., semi-annual, payable July 1.

Foreclosure Sales.

The *Selma, Rome & Dalton* road was sold in Selma, Ala., June 14, under the decree of the Alabama Supreme Court. It was bought for $1,700,000 by R. T. Wilson, of New York, for the bondholders. The road sold was from Selma to the Georgia line, 172 miles, the section thence to Dalton, Ga., having been sold and reorganized several years ago. It is understood that Mr. Wilson, acting for the East Tennessee, Virginia & Georgia Company, holds a majority of the bonds, and that the reorganization will be in the interest of that company. The foreclosure was of the old Alabama & Tennessee River bonds, which the Supreme Court held to be a prior lien on the road, to the exclusion of the securities issued by the later organization, the Selma, Rome & Dalton Company. The United States Supreme Court has lately granted an appeal from the decision of the Alabama Supreme Court, but refused to stay the sale. The proceeds of the sale, however, will have to be held until a final decision is reached as to their distribution.

Erie Railway Conductors' Relief Association.

The annual meeting of this Association was held in Elmira, N. Y., last week, with a full representation. None but routine business was transacted. The Association was reported in a prosperous and growing condition, with 190 members now on the rolls.

Yard-Masters' Mutual Benefit Association.

The annual convention of this Association met at the Revere House, Boston, June 9, with 43 delegates in attendance. The Association was reported in a flourishing condition. The meeting continued three days, during which all the usual routine business was disposed of.

The delegates were entertained by a steamboat excursion down the harbor and by visits to the Pacific Mills at Lawrence and the great watch factory at Waltham.

Southern Association, General Passenger & Ticket Agents.

A called meeting of this Association was held in Chattanooga, Tenn., last week. The President, Mr. H. M. Drane, of the Macon & Brunswick, presided, and there was a large attendance. The fixing of spring rates was the business in hand, and the chief point of interest was the rate between Chattanooga and Cincinnati, which has lately been cut down to $6.75 (not much over half the old rate) by the Cincinnati Southern. After a long and sharp discussion, it was finally decided that the Cincinnati Southern was the shortest line and had the right to fix the rate. It was therefore left unchanged, but further trouble over it is expected.

The Southern Railway & Steamship Association and the Georgia Commission.

A circular from General Commissioner Powers gives a letter from the Georgia Commission, dated June 3, with comments as follows:

DEAR SIR: In reply to your favor of May 18, and your verbal enquiries of 1st inst., I am directed by the Commissioners to say, that they will be obliged if you will impart the following information to the parties in interest:

Under the law, freights coming from or going beyond the boundary of the state are not within the jurisdiction of the Commissioners. A shipment from Rome to Charleston, passing over the Rome, Western & Atlantic, Georgia, and South Carolina railroads, for example, could not in any way be regulated by the Commissioners. This *line*, then, "is not subject to the jurisdiction of the Commission." It competes with *lines* to the sea, however, "which are within the jurisdiction of the Commission." All such cases are intended to be covered by Rule 6, to the end that our own roads and seaports may be able to compete with roads and seaports without the state. Shipments *covered by Note 1, over more than one road in this state*, being shipped from any point in this state to another point in the state, are held to be within the meaning of that note—the intention being to give the railroads the largest liberty in fostering the industries of the state—and each road in such *line* can lower rates on such articles without conflicting with Rule 6.

Two or more roads in the state, desirous of making joint rates between points on their respective roads, may make such joint rates on articles *not* controlled by Note 1, by taking the rate allowed for an equal distance, if the points were on one road, and applying it to the different roads. For example:

First Class—Marietta to Atlanta—20 miles, per 100 lbs.....	.20
Atlanta to Macon—103 miles, per 100 lbs.....	.48
Macon to MacRae—76 miles, per 100 lbs.....	.39
The sum of *these* locals for 199 miles would be.....	$1.07

But the rate for 199 miles, if on one road, would be per 100 lbs., first class, 70 cents. Now, a joint rate of $1.07, or of 70 cents per 100 lbs., could be made, or a rate between these amounts—the railroads making their own divisions of the total rate between themselves.

Any further information the Commission will be glad to furnish, if within its power, at any time.

I am, my dear sir, very respectfully yours,
R. A. BACON, Secretary.

Rule No. 6, referred to, is as follows:

"6. *Regulations Concerning Freight Rates.*—The freight rates prescribed by the Commission are maximum rates, which shall not be transcended by the railroads. They may carry, however, at less than the prescribed rates, provided that if they carry for less for one person they shall for the like service carry for the same lessened rate for all persons, except as mentioned hereafter; and if they adopt less freight rates from one station, they shall make a reduction of the same per cent. at all stations along the line of road, so as to make no unjust discrimination as against any person or locality.

"*Competing Lines not all Within the Jurisdiction of the Commission.*—When, however, from any point in this state there are competing lines, one or more not subject to the jurisdiction of the Commission, then the line or lines which are so subject, and are working at the lowest rate under the rules, may at such competing point make rates below the standard tariff, to meet such competition, without making a corresponding reduction along the line of road."

This, I understand, authorizes the lines or roads running to and from Savannah and Brunswick to make same rates to and from Athens, Atlanta, Augusta, Cedartown, Dalton, Macon, Milledgeville, Newnan, Rockmart, Rome, stations Atlanta & West Point Railroad, stations Western & Atlantic Railroad, West Point, Georgia and other competitive points, as are made from and to same points from and to Charleston and Port Royal. Also, to make joint rates to and from points on one road to and from points on any other road, not more than combined local rates nor less than for like distance on any one of the roads.

ELECTIONS AND APPOINTMENTS.

Burlington & Missouri River in Nebraska.—A circular from General Manager Touzalin, dated June 1, gives the officers of this road as follows:

General Officers: General Manager, A. E. Touzalin; Assistant General Manager, P. Lowell; Auditor, C. D. Dorman; Assistant Treasurer, J. G. Taylor; General Superintendent, G. W. Holdrege; General Freight and Ticket Agent, P. Lowell; Land Commissioner, J. D. Macfarland; Chief Engineer, T. E. Calvert; Master Mechanic, D. Hawksworth; Chief Clerk in charge Managers office, W. W. Peet; Purchasing Agent, G. Hargreaves; Superintendent Telegraph, C. E. Yates; Car Accountant, J. M. O'Grady.

Burlington & Missouri Railroad and Nebraska Railway Divisions.—Division Superintendent, J. O. Phillippi; Assistant Superintendent, D. E. Thompson; Foreman Bridges, C. P. Olsen; Road-Master between Omaha, Plattsmouth and Lincoln, including Plattsmouth and Omaha yards, T. L. Murphy; Road-Master between Lincoln, Hastings and Beatrice, including Lincoln yards, J. H. Daily; Road-Master between Nemaha and Central City, J. P. Taylor.

Atchison & Nebraska Railroad Division.—Assistant Superintendent, J. McConniff; Foreman Bridges, L. K. Spafford; Road-Master, L. K. Spafford; Assistant Road-Master, John Beck.

Republican Valley Railroad Division.—Assistant Superintendent, A. Campbell; Foreman Bridges, P. Olsen; Road-Master, P. Donnelly.

Chief Operator in Lincoln Office (for all Divisions), T. McAlpine.

For commercial business of the road: Assistant General Freight Agent, George B. Harris; Chief Ticket Clerk, P. S. Eustis; General Agent at Atchison (temporarily), George B. Harris.

Storekeeper and Chief Clerk Master Mechanics' office, C. S. Dawson.

Land Department.—Secretary, in charge of Accounts and Records, T. H. Leavitt; Assistant Land Commissioner, in charge of Taxes, Delinquents and Office, J. C. Bonnell; Cashier, J. G. Floyd.

Canada Southern Leased Lines.—The following officers were chosen at the recent annual meetings: *Canada South-*

ern Bridge.—Directors, James Tillinghast, E. A. Wickes, Augustus Schell, William H. Vanderbilt, E. D. Worcester, Samuel F. Barger, William L. Scott, J. W. Converse, Sidney Dillon. *Toledo, Canada Southern & Detroit.*—Directors, James Tillinghast, E. A. Wickes, Cornelius Vanderbilt, Samuel F. Barger, Augustus Schell, E. D. Worcester, Joseph Harker, G. W. Davis, William L. Scott.

Canton Co.—At the annual meeting in Baltimore, June 10, the following directors were chosen: A. B. Baylis, L. Von Hoffman, James B. Colgate, George F. Stone, New York; George S. Brown, Wm. G. Harrison, Charles Webber, W. B. Brooks. The board elected W. B. Brooks, President; W. H. Graham, Vice-President; W. W. Janney, Secretary and Treasurer. The company owns the Union Railroad and tunnel in Baltimore.

Central, of Georgia.—Major W. F. Shellman has been appointed Superintendent of the Southwestern Railroad, in place of W. G. Raoul, chosen Vice-President. Mr. Shellman has been for several years General Agent for the Southwestern, at Macon.

Chicago & Canada Southern.—The following directors were recently chosen: William H. Vanderbilt, Cornelius Vanderbilt, Augustus Schell, E. A. Wickes, E. D. Worcester, Samuel F. Barger, Sidney Dillon, William L. Scott, John Newell. The road is controlled by the Lake Shore & Michigan Southern.

Chicago & Northwestern.—Mr. C. C. Wheeler, late Assistant General Superintendent, is appointed Assistant General Manager, a new office.

Mr. J. S. Oliver, late of the Iowa Division, is appointed Assistant General Superintendent, in place of Mr. Wheeler.

Mr. J. M. Whitman, late of the Chicago & Pacific road, is appointed Superintendent of the Iowa Division and branches, in place of Mr. Oliver.

Chicago, Saginaw & Canada.—Mr. James T. Hall has been appointed Superintendent of this road. His address will be St. Louis, Mich.

Mr. H. T. La Bar has been appointed General Freight Agent, and all statements of account relating to the freight department are to be sent to him at St. Louis, Mich.

Cincinnati, Hamilton & Dayton.—The new board has elected J. H. Devereux, President; John Carlyle, Vice-President; F. H. Short, Secretary, Treasurer and Assistant to the President; Lewis Williams, General Manager; J. H. McLeod, General Freight Agent; Samuel Stevenson, General Passenger Agent. Mr. Devereux succeeds R. M. Shoemaker: the Vice-President is a new office on this road. Mr Short has the position of Assistant to the President added to his previous office of Secretary and Treasurer. Mr. Williams is promoted from General Superintendent to General Manager, and Messrs. McLeod and Stevenson are continued in their old positions.

Erie Railway Conductors' Relief Association.—At the annual convention in Elmira last week the following officers were chosen: President, R. A. Stuart, Elmira, N. Y.; Vice-President, Chauncey Hale, Middletown, N. Y.; Grand Secretary and Treasurer, Henry R. May, Corning, N. Y.; Directors, A. L. Westervelt, Eastern Division; George Dewitt, Delaware Division; A. A. Pettengill, Susquehanna Division; J. A. Farnham, Western Division; W. B. Bassett, Rochester Division; Charles A. Stuby, Buffalo Division.

Fremont, Elkhorn & Missouri Valley.—The following directors were recently chosen: Oliver Ames, John I. Blair, C. C. Crowell, Horace Williams, S. P. Wisner. The road is owned by the Sioux City & Pacific.

Lexington & Big Sandy.—The following directors were chosen at a recent meeting: W. F. Gaylord, John Means, Douglas Putnam, Jr., Ashland, Ky.; Wm. Biggs, Greenup County, Ky.; John G. Peebles, Portsmouth, O.; A. S. Winslow, Cincinnati; James M. Bailey, Pittsburgh. The board elected John Means, President; John G. Peebles, Vice-President; Robert Peebles, Secretary.

Little Rock & Ft. Smith.—At the annual meeting in Little Rock recently, the following directors were chosen: W. M. Fishback, Ft. Smith, Ark.; Jesse Turner, Van Buren, Ark.; Sol. F. Clark, D. E. Jones, W. D. Slack, Little Rock, Ark.; Elisha Atkins, J. H. Converse, F. H. Perkins, F. M. Weld, Boston. The board elected J. H. Converse President; Jesse Turner, Vice-President; J. W. Gay, Secretary; Joseph Kampmann, Treasurer.

Louisville & Nashville.—The following appointments of general freight agents are announced by Traffic Manager E. B. Stahlman: John M. Culp, Louisville, for the Main Stem and Branches, Memphis Line, Nashville & Decatur Division, Owensboro & Russellville Division and the South & North Alabama Railroad; Theodore Welch, Montgomery, Ala., for the Mobile & Montgomery, Montgomery & Selma, Pensacola & Selma, Pensacola and New Orleans & Mobile lines; Andrew Broaddus, St. Louis, for the Evansville, Henderson & Nashville Division and the St. Louis & Southeastern road.

Mr. E. O. Saltmarsh has been appointsd Superintendent of the Owensboro & Russellville Division.

Mr. John Kilkeny has been appointed General Traveling Agent. He was formerly on the Louisville, Cincinnati & Lexington, and lately on the Chicago, St. Louis & New Orleans.

Louisville, New Albany & St. Louis.—The following circular is dated June 9: "Mr. H. L. Shepherd has been appointed Superintendent of this company, and will be respected and obeyed accordingly."

Nevada & Oregon.—The directors of this new company are: Ex-Gov. Woods, John P. Davis, M. Moore, R. McMeachan, C. L. Eilis, T. Coffin, J. C. McFarnahan. The office is at Reno, Nevada.

Niagara Grand Island Bridge Co.—The directors of this new company are: James Tillinghast, W. H. Vanderbilt, W. K. Vanderbilt, C. Vanderbilt, Augustus Schell, Samuel F. Barger, E. D. Worcester, E. A. Wickes, Sidney Dillon.

Northeastern (South Carolina.—Mr. John F. Divine has been appointed Superintendent of this road and also of the Cheraw & Darlington and the Cheraw & Salisbury roads. Mr. Divine will still retain his position as Superintendent of the Wilmington, Columbia & Augusta and the Wilmington & Weldon roads, with his office in Wilmington, N. C. The appointment was to take effect June 15.

St. Louis, Alton & Terre Haute.—At the annual meeting in St. Louis, June 7, the following directors (one-third of the board) were chosen for three years: Levi Davis, Alton, Ill.; Edward Abend, Belleville, Ill.; James A. Eads, Paris, Ill.; Henry H. Beach, Litchfield, Ill. The board subsequently elected Eli Wiley, of Charleston, Ill., and George G. Haven, of New York, directors to fill the vacancies caused by the death of A. H. H. Rountree and the resignation of A. Gilkinson. The board re-elected W. Bayard, Acting President; G. W. Parker, Vice-President, Treasurer and General Manager; E. F. Leonard, Secretary.

PERSONAL.

—Hon. G. A. Hobart, Receiver of the New Jersey Midland Railroad, is to try another kind of receivership, having been appointed Receiver of the First National Bank of Newark, N. J., which has just suspended.

—It is reported that Mr. A. Pope, now General Freight and Passenger Agent of the Atlantic Coast Line, has been offered the position of General Eastern Agent of the Louisville & Nashville and its controlled lines.

—S. M. Waite, President of the Vermont Valley Company, has disappeared from his home at Brattleboro, Vt., and is believed to have stolen a large amount from the First National Bank of Brattleboro, of which he is also President. So far as known, the railroad company has not suffered.

—Hon. Henry Ledyard, formerly a prominent citizen of Detroit, but for some years past a resident of Newport, R. I. died June 7, at Nice, Italy, where he had gone for his health. He was 68 years old and had been sick for some time. He was one of the first incorporators of the Detroit & Milwaukee road, and for many years a director of the company. He was father of General Manager Ledyard, of the Michigan Central.

—Mr. George Opdyke, for many years a prominent merchant and banker of New York, died at his residence in that city June 12, aged 75 years. He was born in Hunterdon County, N. J., and, after living in Cleveland and New Orleans, came to New York in 1832. For many years he was in the dry-goods business, but in 1868 he gave it up and became a banker. He dealt largely in railroad securities and was concerned in placing upon the market the bonds of many companies, including the Montgomery & Eufaula and other Southern roads, and, most important of all, the New York & Oswego Midland. He was a director of that company, and its President for a little while, and it was largely indebted to him in 1873, but he managed to get through the panic of that year safely. He was prominent in politics and was chosen Mayor of New York in 1861.

—A Philadelphia paper gives the following record of Mr. Cassatt, of Pennsylvania Railroad:

"Mr. Cassatt, the new First Vice-President, was born about forty years ago in Pittsburgh. In 1859 he graduated as a civil engineer at the Rensselaer Polytechnic Institute of Troy, New York, an institution which ranks among training schools for higher grades of practical railway men very much as West Point ranks among military schools. In April, 1861, he entered the service of the Pennsylvania Railroad Company as rodman in the office of the Resident Engineer of the Philadelphia Division. In 1863 he was appointed Assistant Engineer to aid in the construction of the Connecting Railway. In 1864 he was appointed Resident Engineer of the Middle Division of the Philadelphia & Erie Railroad, with his office at Renovo. In 1866 he was appointed Superintendent of Motive Power and Machinery on the Philadelphia & Erie Railroad, with office at Williamsport. On Nov. 16, 1867, he was appointed Superintendent of Motive Power and Machinery on the Pennsylvania Railroad, with his office at Altoona. In that capacity he had general charge of all the shops and rolling-stock of the company. On April 1, 1870, he was appointed General Superintendent of the Pennsylvania Railroad, which then comprised the line between Philadelphia and Pittsburg, and the immediate branches operated in connection with the main line. After the lease of the New Jersey line Mr. Cassatt was, on Dec. 1, 1871, appointed General Manager of all the Pennsylvania Railroad Company's lines east of Pittsburgh and Erie, including the New Jersey Division, the Philadelphia & Erie, Northern Central, and Baltimore & Potomac. At the time of the reorganization, which occurred after the death of Mr. J. Edgar Thomson, Mr. Cassatt was, on July 1, 1874, elected Third Vice-President, and he was subsequently elected Vice-President of the Northern Central, Baltimore and Potomac, and West Jersey."

TRAFFIC AND EARNINGS.

Grain Movement.

For the week ending June 5 receipts and shipments of grain of all kinds at the eight reporting Northwestern markets and receipts at the seven Atlantic ports have been, in bushels, for the past seven years:

Year.	Northwestern Receipts.	Northwestern Shipments.—Total.	By rail.	P. c. by rail.	Atlantic Receipts.
1874.....	3,785,257	3,897,590	1,083,705	27.8	4,878,691
1875.....	2,108,200	2,692,067	852,993	31.7	3,002,150
1876	6,094,854	5,042,385	2,147,679	42.6	4,973,426
1877.....	2,215,000	2,783,325	6,244,387	: 2.4	3,294,502
1878.....	3,591,073	4,542,030	1,169,514	24.8	5,898,607
1879.....	6,524,578	6,781,520	3,008,164	44.4	7,042,545
1880.....	8,168,171	7,289,142	1,684,205	23.2	6,790,016

The receipts at Northwestern markets, though enormous, were 638,000 bushels less than in the week preceding. The shipments of these markets on the other hand have been exceeded but twice in the history of the trade: the first week of the opening of lake navigation this spring and once last October. The rail shipments, though very much lower than in the corresponding week of last year (when they were the largest ever known while the lakes were open) have been exceeded but once this year since navigation opened. The lake shipments were 5,605,000 bushels—a quantity unequaled before except when the whole fleet started out at once, as it were, when the lakes opened last April, when 6,052,000 bushels were shipped by lake in one week. The heavy shipments demonstrate the great capacity of the lake marine; but they have evidently tested it to the utmost, for rates have been forced up to figures unheard of for eight years at this season.

The receipts of the Atlantic ports were nearly a tenth less than the week before, but larger than in any other week of this year, and exceeded before harvest but twice in previous years—the corresponding week of 1879, and a week earlier in 1878.

Of the receipts at Northwestern markets for the week this year, Chicago had 50.1 per cent., Toledo 16.6, St. Louis 9.1, Peoria 7.8, Milwaukee 6.4, Detroit 6.0, Duluth 2.6, and Clevelond 1.4 per cent.

Of the receipts at Atlantic ports New York had 45.1 per cent., Philadelphia 21.6, Baltimore 13.2, Montreal 8.8, Boston 6.4, New Orleans 4.4 and Portland 0.5 per cent. The receipts of Philadelphia have become enormous, and those of Baltimore decidedly large, though in the first half of May they had been exceptionally small receipts. The explanation is the advance in lake and canal rates, which has again made it advantageous for a large part of the country to send through by rail to Baltimore and Philadelphia.

For the week ending June 9, receipts were:

		1880.	1879.	Inc. or Dec.	P. c.
New York	By water..	2,120,455	1,347,694	I. 772,761	57.3
	By rail	1,434,990	1,844,548	D. 409,558	22.1
	Total....	3,555,445	3,192,242	I. 363,203	11.4
Boston, Philadelphia and Baltimore...		2,537,300	2,556,594	D. 19,294	0.8

For the same week receipts and shipments at Buffalo were:

	Receipts— 1880.	Receipts— 1879.	Shipments— 1880.	Shipments— 1879.
By water.....	3,956,200	1,198,967	2,665,650	1,300,852
By rail.	833,400	1,176,600	1,450,900	1,333,686
Total	4,789,600	2,375,567	4,116,850	2,637,538

The total receipts are twice as great as last year. The total shipments were one-half greater than last year, the increase being mostly by canal, though there was an increase of about 9 per cent. in the rail shipments also. It is noticeable that the whole rail movement was about the same as last year, though the rail rates were, probably, more than twice as high.

From Jan. to June 9, Chicago receipts have been 9.6 per cent., and Chicago shipments 13.8 per cent. greater than last year, while Milwaukee receipts have been 31.3, and Milwaukee shipments 4.2 per cent. *less* than last year. The two together have larger receipts and much larger shipments than last year.

Railroad Earnings.

Earnings for various periods have been reported as follows:

	1880	1879.	Inc. or Dec.	P. c.
Five months ending May 30:				
Ala. Gt. Southern..	$243,946	$164,089	I. $79,857	48.7
Bur., Cedar Rapids & No.....	828,968	543,645	I. 285,323	52.8
Chesapeake & Ohio	1,041,888	664 351	I. 377,537	56.9
Chi. & Alton.....	2,786,999	1,736,119	I. 1,050,880	60.5
Chi. & Northwestern.....	6,737,313	5,567,245	I. 1,170,068	21.0
Cleve., C.i., Cin & Ind	1,851,557	1,449,190	I. 402,367	27.8
Cleve., Mt. Ver. & Del.....	174.136	147,001	I. 27,135	18.5
Great Western	1,914,421	1,676,291	I. 238,130	14.2
Little Rock & Fort Smith.....	170,218	106,441	I. 63,777	60.2
Louisville & Nashville.....	3,046,783	2,124,526	I. 922,257	43.4
Minn. & St. Louis.	237,291	161,137	I. 76,154	47.3
Nash., Chatta. & St. Louis.....	880,550	732,840	I. 147,710	20.1
Net earnings.....	383,784	274,563	I. 109,221	39.7
Northern Pacific...	648,762	510.498	I. 138,264	27.1
St. L., Alt. & T. H. Main Line.....	514,095	331,078	I. 183,017	55.3
St. L., Alt. & T. H. Belleville Line...	255,880	216,030	I. 39,850	18.0
St. Paul & Sioux City..... ..	554,207	407,470	I. 146,737	36.0
Scioto Valley.....	112,869	106,418	I. 6.451	6.1
Four months ending April 30:				
At., Miss. & Ohio..	$637,343	$482,260	I. $155,083	32.2
Net earnings....	346,634	187,087	I. 159,547	85.3
Bur., Cedar Rap & No.....	679,464	426,695	I. 252,769	50.8
Net earnings....	244,168	142.871	I. 101,297	70.8
Carolina Central..	168,220	156,058	I. 12,162	7.8
Net earnings....	63,364	68.321	D. 4,957	7.3
Chesapeake & Ohio.	845,337	485,527	I. 359,810	74.0
Net earnings.....	196,616	21.704	I. 174,912	806.0
Chi., Bur. & Quincy..	5,095,021	4,177,968	I. 917 053	21.9
Net earnings.	2,488,310	1,819,448	I. 668,862	36.2
Louisville & Nash...	2,419,166	1,698,776	I. 720,390	42.4
Net earnings.....	982,636	624,957	I. 357,679	57.2
St. L., Iron Mt. & So.	1,905,979	1,344,533	I. 561,446	41.8
Net earnings.....	680,475	369,594	I. 310,881	84.0
Three months ending March 30:				
At. & Char. Air Line.....	$247,197	$197,494	I. $49,703	25.2
Chi. & Alton.....	1,647,541	978,788	I. 668,753	68.3
Net earnings.....	652,432	390,008	I. 262,424	67.3
Month of March:				
At. & Char. Air Line.....	$78,910	$75,806	I. $3,104	4.1
Net earnings.....	31,383	28,775	I. 2,608	9.1
Month of April:				
Georgia.....	$80,574	$69,531	I. 11,044	15.9
Net earnings.....	11,518	7,639	I. 3,879	51.0
Month of May:				
Ala., Gt. Southern.	$44,145	$30,438	I. $13,707	45.1
Bur., Cedar Rapids & Northern....	149,504	116,950	I. 32,554	27.8
Chesapeake & Ohio	196,551	178,824	I. 17,727	9.9
Chi. & Alton.....	602,132	421,937	I. 180,195	42.7
Chi. & Northwestern.....	1,794,700	1,433,365	I. 361,335	25.2
Cleve., Col., Cin. & Ind.....	369,714	320,273	I. 49,441	15.4
Cleve., Mt. Ver. & Del.....	34,401	35,084	D. 683	10.2
Georgia	64,375	57,461	I. 6,914	12.0
Net earnings.....	3,436	2,623	I. 813	31.3
Little Rock & Ft. Smith..	21,471	14,690	I. 6,781	46.1
Louisville & Nashville	627,600	425,750	I. 201,850	47.4
Minn. & St. Louis	59,593	37,407	I. 22,186	59.9
Nash., Chatta. & St. L.....	158,839	139,524	I. 19,315	13.8
New York & New England....	174,267	168,367	I. 5,900	3.5
Northern Pacific .	207,700	204,195	I. 3,505	2.2
St. L., A. & T. H., Main Line.....	99,235	63,210	I. 36,025	57.0
St. L., A. & T. H., Belleville Line..	50,170	37,163	I. 13,007	35.2
St. Paul, Minn. & Manitoba	281,899	268,657	I. 13,242	49.3
St. Paul & Sioux City.....	130,809	92,023	I. 38,786	42.2
Scioto Valley.....	22,648	19,420	I. 3,228	16.6
First Week in June:				
Chi. & Eastern Ill..	$25,771	$15,272	I. $10,499	68.6
St. L., Iron Mt. & So	93,900	65,745	I. 28.155	42.9
Week ending June 5:				
Grand Trunk.....	$179,729	$135,574	I. $44,155	32.5

Coal Movement.

Coal tonnages for the week ending June 5 are reported as follows:

	1880.	1879.	Inc. or Dec	P. c.
Anthracite.....	374,618	500,106	D. 125,488	25.1
Semi-bituminous.	104,718	72,397	I. 32,321	44.6
Bituminous, Penna.....	63,079	37,305	I. 25,774	69.1
Coke, Pennsylvania....	35,018	40,901	D. 5,883	14.4

The coal tonnage of the Pennsylvania Railroad for the five months to the end of May was as follows:

	1880.	1879.	Increase.	P. c.
Anthracite	418,072	374,972	43,100	11.5
Semi-bituminous	739,285	722,938	16,348	2.3
Bituminous.....	1,026,038	689,663	336,375	48.8
Coke.....	756,086	517,481	238,605	46.1
Total.....	2,939,482	2,305,054	634,428	27.5

The small increase in semi-bituminous is due to the strikes in the Clearfield Region.

The coal tonnage of the New York canals to the end of May was as follows:

	1880.	1879.	Increase.	P. c.
Anthracite.....	153,818	131,730	22,088	16.8
Bituminous	18,940	11,849	7,091	60.1
Total.....	172,758	143,579	29,179	20.3

The canals opened April 20 this year and May 8 last year.

New York-Boston Passenger Rates.

The negotiations between the Old Colony and the New York, Providence & Boston companies have fallen through. No agreement could be reached and the present sharp competition between the steamboat lines will continue, with the through fares at $1.

It is understood that the Boston & Albany has made a

proposition to the New York, New Haven & Hartford to put on a night train between the two cities at $2 fare, to meet the competition of the boat-and-rail lines. No answer has yet been given. The Boston & Albany has all along favored a reduction of fares by the all-rail line, but the New Haven Company has opposed it.

Oil Freights.

A reduction in freight rates on crude oil to tide-water from 80 to 60 cents a barrel is announced, taking effect June 16. The cause assigned is the expected completion of the pipe line from Hornellsville to Buffalo and the competition expected from that line and the canal.

It is stated that notice has been given of the abrogation of the contract made some months ago, under which a share of the oil traffic was given to the Tidewater Pipe Line and the Reading and New Jersey Central roads.

RAILROAD LAW.

The Illinois Railroad Law.

A dispatch from Springfield, Ill., June 12, says: "The opinion of the Illinois Supreme Court in the case of the Illinois Central Railroad Company *vs.* The People, etc., an appeal from Douglas County, was filed to-day in the office of the Clerk of the Central Grand Division. The judgment of the Circuit Court is affirmed, and the constitutional power of the General Assembly to pass the law of 1873 to prevent railroad extortions and unjust discriminations is sustained, but the opinion is meager and unsatisfactory, and the action of the Court will undoubtedly cause speculation. This case was an agreed one, and has been pending for years. The Court has been slow to decide it, a fact to which the Railroad and Warehouse Commissioners have frequently referred, and and when at last the Court was compelled to dispose of the case it was decided in favor of the people against the railroad company.

"The law provides that a schedule of reasonable maximum rates shall be prepared by the Railroad Commissioners for each of the railroads in the state, and that such schedules shall be *prima facie* evidence in our courts that the rates fixed are reasonable, but the Supreme Court has failed to construe section 8 and to determine to what extent the railroad companies of the state are bound by the rates fixed by the board. The opinion is as follows:

"Dickey, Judge—This is an action against the Illinois Central Railroad Company, under the statute of this state of May 2, 1873, to prevent extortion and unjust discrimination, etc. Judgment was rendered against the defendant for $1,000 and defendant appeals. It is insisted that the Court, in the declaration under which judgment was given, is defective. The case was, by agreement, tried upon an agreed state of facts set out in the record, to which is added the following: 'If, upon the foregoing facts, this Court finds for plaintiff, it is agreed that a fine of $1,000 may be assessed by the Court, and should the Court find for defendant, the judgment is to be entered accordingly.' There was no plea filed. Both parties submitted the case on the agreed statements of facts under the seventh count of the declaration. I am directed by the Court to say that a majority of the Court think that the count in question is sufficient to sustain the judgment. The proofs in the record show clearly a violation of the statute, and the only question as to the propriety of the judgment depends upon the constitutional power of the General Assembly to pass the law. It is insisted that the act is a violation of a contract between the state and the corporation growing out of the charter of the appellant. The charter provides that the board of directors shall have power to establish such rates of tolls for the conveyance of persons and property upon the same (the road) as they shall from time to time by their laws direct and determine, and levy and collect the same for the use of said company; and, in consideration of the grants, privileges and franchises conferred, it is declared the corporation shall pay into the state treasury a certain per cent. of its earnings. It is insisted by appellants that the statute regulating these tolls is a violation of this contract. This depends upon the construction of the terms of the charter. Without a charter the corporation had no capacity to do any business whatever; no power to make contracts, to sue or be sued. This charter confers these functions and prescribes the mode of their exercise. A natural person having permission to cross public highways, and owning the land necessary, may, without a charter, construct and operate a railroad, and has power to establish such rates of tolls for the conveyance of persons and property upon the same as he may from time to time determine, and may levy and collect the same for his own use. He is not, however, beyond or above the legislative power of the state to pass laws prohibiting and punishing extortion, and, within reasonable limits, to define what shall be deemed extortion. The charter of this corporation is, beyond a doubt, a contract under the adjudged cases in this and other states by which the corporation acquired the powers and functions to transact such business in the mode prescribed, but it is the opinion of a majority of the Court that all this is by necessary implication subject, as all citizens are, to the legislative power of the state to define, prohibit and punish extortion. The reasons and authorities leading to this conclusion are presented and discussed in the case of Ruggles *vs.* The People, 91 Ill., 255, 256, and this case must be governed by that. The judgment must be affirmed. The writer of this opinion did not concur in that case, and does not concur in this. Judgment affirmed."

THE SCRAP HEAP.

Rules for Ladies Traveling Alone.

First. Be sure you know where you want to go before you get on the train.

Second. When you purchase your ticket you will have to pay for it; no use to tell the ticket agent to "charge it and send the bill to your husband." And if he says the price of the ticket is $2.96, don't tell him you can get one just like it of the conductor or at the other store for $2.50; he won't believe you and he may laugh at you.

Third. Never travel without money. It requires broad views, liberal education, keen discernment and profound judgment to travel without money. No one can do this successfully but tramps and editors.

Fourth. Beware of the commercial traveler.

Fifth. Don't give a stranger your ticket and ask him to go out and check your trunk. He will usually be only too glad to do it. And what is more, he will do it, and your trunk will be so effectually checked that it will never catch up with you again. And then when the conductor asks for your ticket, and you relate to him the pleasing little allegory about the stranger and the baggage, he will look incredulous and smile down upon you from half-closed eyes and say that it is a beautiful romance, but he has heard it before. And then you will put up your jewelry or disembark at the next station.

Sixth. If you are going 300 miles, don't try to get off the train every 15 minutes under the impression that you are there. If you get there in 12 hours, you will be doing excellently.

Seventh. Call the brakeman "conductor;" he has grown proud since he got his new uniform, and it will flatter him.

Eighth. Put your shawl-strap, bundle and two paper parcels in the hat-rack, hang your bird-cage to the corner of it, so that when it falls off it will drop into the lap of the old gentleman sitting behind you; stand your four house-plants on the window-sill, set your lunch-basket on the seat beside you, fold your shawls on the top of it, carry your pocket-book in one hand and hold your silver mug in the other, put your two valises under the seat, and hold your band-box and the rest of your things in your lap. Then you will have all your baggage handy and won't be worried or flustered about it when you have only 29 seconds in which to change cars.

Ninth. Address the conductor every 10 minutes. It pleases him to have you notice him. If you can't think of any new question to ask him, ask the same old ones every time. Always call him "Say" or "Mister."

Tenth. Pick up all the information you can while traveling. Open the window and look forward to see how fast the engine is going. Then when you get home you can tell the children about the big cinder you picked up with your eye and how nice and warm it was and what it tasted like.

Eleventh. Don't hang your parasol on the cord that passes down the middle of the car. It isn't a clothes line. It looks like one, but it isn't.

Twelfth. Keep an eye on the passenger who calls the day after Monday "Chewsday." He can't be trusted a car's length.

Thirteenth. Do not attempt to change a $20 bill for any one if you have only $9.25 with you; it can't be done.

Fourteenth. If you want a nap, always lie with your head projecting over the end of the seat, into the aisle. Then everybody who goes up and down the aisle will mash your hat, straighten out your frizzes, and knock off your back hair. This will keep you from sleeping so soundly that you will be carried by your station.—*Burlington Hawkeye.*

He Didn't Scare.

A vagrant ass stood beside the track of the Sunset Railroad at the depot a few mornings ago, an engine moved slowly up, it stopped within a few feet of the ass, the engineer blew one of those terrible screams, prolonged and ear-piercing, such a blast as makes a sleeping Millerite dream of the day of judgment. Did the ass scare? Not worth a cent! Did he shake the sloth from his limbs, erect tail and speed away like the asses of Bassorah, faster than the Bedouin coursers run back to the chapparal? No he didn't. He turned one ear toward the engine, just as a deaf man uses his tin ear-trumpet, and caught every particle of the sound. And when the steam-blown whistle ceased its notes and all the echoes died away the animal straightened out his neck, opened his mouth, and in a voice that deafened all the railroad men and caused the freight clerk to drop his pen, roared: "I can't! I can't! I can't! I can't be beat! be beat! be beat! I c-a-n-'t be-be-be-be beat!"—San Antonio (Tex.) *Herald.*

The Railroad Man's Shibboleth.

Dana Krum, one of the conductors on the Erie Railroad, was approached before train-time by an unknown man, who spoke to him as if he had known him for years. "I say, Dana," said he, "I have forgotten my pass, and I want to go to Susquehanna; I am a fireman on the road, you know!" But the conductor told him he ought to have a pass with him. It was the safest way. Pretty soon Dana came along to collect tickets. Seeing his man, he spoke when he reached him: "Say, my friend, have you the time with you?"

"Yes," said he, as he pulled out a watch, "it is twenty minutes past nine."

"Oh, it is, is it? Now, if you don't show me your pass, or fare, I will stop the train. There is no railroad man that I ever saw who would say 'twenty minutes past nine.' He would say 'nine-twenty.'"

He settled.—*Paterson (N. J.) Press.*

OLD AND NEW ROADS.

Adirondack.—A plan for the reorganization of this company has been submitted to the parties in interest. It is to complete the foreclosure, wiping out the present bonded debt of $6,000,000, and to issue $4,000,000 first-mortgage bonds, $1,500,000 second-mortgage bonds and $4,000,000 stock. The first-mortgage bonds are to be used for the extension and completion of the road; the second-mortgage bonds and stock to be divided among the holders of old bonds and other creditors. The company owns a railroad from Saratoga, N. Y., to North Creek, 60 miles, which was intended to run through the wilderness to Ogdensburg. It has been in charge of a receiver since 1874.

Alabama Great Southern.—It is reported that arrangements are being made by this company to build the line from Meridan, Miss., to New Orleans, which was projected several years ago, and on which some work has been done at different times.

Albany & Jersey City.—This company has filed articles of incorporation. It is a reorganization of the Jersey City & Albany, and owns a road from Ridgefield Park, N. J., on the New Jersey Midland, to Haverstraw, N. Y., 26 miles. This line is to be extended up the west bank of the Hudson to a point near Newburg, where it will connect with a branch which the New York, Ontario & Western intends to build from Fair Oaks to Newburg. It will hereafter be extended from Newburg north up the river to Albany. It is controlled by the New York, Ontario & Western Company.

Atchison, Topeka & Santa Fe.—At a meeting held in Boston last week, the board voted not to make public hereafter the weekly or monthly earnings of the road.

Atlantic & North Carolina.—The Wilmington & Weldon Company has offered to lease this road on the following conditions:

1. The lease to be for 30 years at $32,500 a year, payable quarterly; the lessor to pay all taxes, and to apply all surplus over taxes and interest to reduction of the debt.
2. The road and equipment to be fully maintained. The gauge to be changed to that of the Wilmington & Weldon (4 ft. 8½ in.) at cost of the lessee.
3. Rates on cotton over the leased road not to be advanced over the tariff of April 1, 1878.
4. The lease to be terminable by vote of the stockholders, provided the state of North Carolina should resume possession or control of the North Carolina Railroad after the termination of its lease to the Richmond & Danville Railroad Company, and will arrange to carry into effect what is termed the "North Carolina system."

Baltimore & Delta.—This company has executed a mortgage upon all its property now owned or hereafter to be acquired to secure an issue of $600,000 bonds, to bear 6 per cent. interest and to have 30 years to run. The proceeds of these bonds are to be used to complete the road.

Baltimore & Ohio.—The Baltimore City Council has refused to pass an ordinance providing for the adjustment of the city loan of $5,000,000 made to this company in 1853, or to accept payment of the same as offered by the company. This action was taken on the opinion of the city law officers that the Council had no power to alter the terms of the original ordinance under which the loan was made. The sinking fund for this loan now amounts to $2,226,181, and the company desired to pay the balance, or at any rate to pay interest only on the amount not covered by the sinking fund.

Boston & Albany.—The Boston *Traveller* of June 12 says: "Notwithstanding the terminal accommodations of this railroad in Boston are far superior to those of our other railroads, especially as regards its facilities at East Boston for the export traffic, additions to these facilities are not only now being made, but others still more extensive are to be immediately commenced in connection with the recent purchase which the corporation made adjoining its Grand Junction wharves. The work of changing Dock No. 7 into a wharf, which will fill up the space between Piers 6 and 8 has been in progress for some time. Over this a new shed, 455 by 85 ft. is now being constructed, and another one immediately south of the new one, upon Pier 8, 440 ft. by 60 ft. will also be built, and alongside of it, in Dock No. 8, a berth for ocean steamships, 500 ft. by 100 ft., with a depth of 28 ft. at low tide, will be dredged out.

"With this improvement, which will change Piers 6 and 7 and Dock 7 into a single pier, covered with three immense loading sheds or warehouses, one 555x78, one 455x85, and the third 440x60 feet and berths alongside for the accommodation of four of the largest ocean steamships, the Boston & Albany will possess the finest pier for its export traffic that any one of the trunk lines can show.

"Other improvements at East Boston will include the erection of a two-story building 500x40ft. for storage purposes, fronting upon Marginal street, and it is probable that Pier 1, which already includes what was formerly Dock 2 and Pier 2, will have Dock 3 added to it, when it will compare favorably with the enlarged pier described above. Arrangements will also be made to convey grain from the huge elevator of the company by belts to the different loading piers, as is now being done in Philadelphia and elsewhere, so as to obviate the necessity of bringing the steamships to the elevator, as is now requisite, or carrying grain to them in barges.

"The Grand Junction docks, with the improvements mentioned here, and in connection with the Cunard docks immediately adjoining, will afford accommodation for some 15 steamships and several sailing vessels to load and discharge their cargoes.

"The second large freight building which this road is reconstructing upon Albany street is now nearly completed, and will be ready for use within a few days. That portion of the old freight depot which occupied the site for the head house of the new passenger station to be built upon Kneeland street, has been taken down, and the debris removed, and preparations are being made for the foundations of the new station, the front of which is to be located some 25½ ft. back from the present line of Kneeland street, or upon a line with the Old Colony Railroad station."

Brattleboro & White Hall.—The grading is now ready for about 20 miles from Brattleboro, Vt., and the ties are being distributed along the line. Work is in progress on the rest of the line to Londonderry, most of the heavy work being finished. The iron is expected to arrive in a few days.

Burlington & Missouri River in Nebraska.—A circular dated June 1 gives the present organization of this company as follows:

On and after June 15, 1880, the officers whose oversight will cover all the lines of this company will be: General Manager, Assistant General Manager, Auditor, Assistant Treasurer, General Superintendent, General Freight and Ticket Agent, Chief Engineer, Purchasing Agent, Superintendent of Telegraph and Car Accountant, all with headquarters at Omaha; Master Mechanic, with headquarters at Plattsmouth.

The jurisdiction of the General Manager and his Assistant will extend over all matters.

The jurisdiction of the General Superintendent will extend over all matters, except commercial, connected with the operating of the roads.

The jurisdiction of the General Freight and Ticket Agent will extend over the commercial interests of the company.

Vouchers, pay-rolls, employés' record, annual and time passes, records of the road and all office matters connected with general oversight of the properties, will be in custody of a chief clerk in charge of Manager's office.

The Chief Engineer will have jurisdiction over all matters connected with construction upon old and new roads, and will have oversight of bridges and buildings and employés connected therewith. All orders for construction or important improvements will be made through the Chief Engineer.

The headquarters for machinery and repairs will be at Plattsmouth.

Materials and material accounts will be kept at Plattsmouth, in charge of storekeeper.

Branch shops will be at Lincoln, Hastings and Atchison.

For purposes of operation, the roads will be divided into four divisions.

The Burlington & Missouri River Railroad Division, consisting of the lines from Omaha and Plattsmouth to Kearney, and from Crete to Beatrice—237 miles.

The Nebraska Railway Division, consisting of the lines from Nebraska City to Central City, and from Nemaha to Nebraska City—178 miles.

The Republican Valley Railroad Division, consisting of the lines from Hastings to Indianola, and from Amboy to the Big Blue River—about 256 miles.

The Atchison & Nebraska Railroad Division, consisting of the line from Atchison to Columbus—221 miles.

(The earnings and expenses of the various divisions will be kept separately).

The Burlington & Missouri River and Nebraska Railway divisions will be operated together under a Division Superintendent, with headquarters at Lincoln, whose organization will be an Assistant Superintendent, a Foreman for repairs of bridges and buildings, and three road-masters. The Division and Assistant Superintendents will have full authority on those divisions over all employés connected with the operation of road, under detailed regulations established elsewhere.

The Republican Valley Railroad Division will be operated, for the present, under an Assistant Superintendent, with headquarters at Hastings, who will have full authority on that division over all employés connected with the operation of the road, under detailed regulations established elsewhere. Under this Assistant Superintendant will be a Road-Master and Assistant Road-Master. The Foreman of bridges and buildings on the Burlington & Missouri and Nebraska Railway divisions will, for the present, act as such on the Republican Valley Division also. The Assistant Superintendent of the Republican Valley Railroad Division will, also, for the present, have charge of the line between Hastings and Kearney Junction, which is temporarily added to his division.

The Atchison & Nebraska Railroad Division will be operated under an Assistant Superintendent, with headquarters at Lincoln, who will have full authority on that

division over all employés connected with the operation of the road under detailed regulations established elsewhere. On this division the roadway, bridges and buildings will be in charge of a Foreman of bridges and Road-Master, with headquarters at White Cloud. Upon this division there will be a General Agent, with headquarters at Atchison, with general jurisdiction at that point, but acting under the orders of the General Freight and Ticket Agent and Assistant Superintendent.

All trains will be despatched from Lincoln.

Trains and movements of cars on the Burlington & Missouri division and Nebraska Railway and Republican Valley divisions, will be despatched in the name of Division Superintendent Burlington & Missouri.

Trains and movements of cars on the Atchison & Nebraska division will be despatched in the name of the Assistant Superintendent of the Atchison & Nebraska.

The despatching and telegraph office at Lincoln will be in charge of a Chief Operator, who will control that office under the Division and Assistant Superintendents.

The Division Superintendent of the Burlington & Missouri and Nebraska Railroad Divisions will have full control of yards, men and trains at Lincoln, and will rank the Assistant Superintendent of the Atchison & Nebraska divisions on all questions in which the two divisions are mutually interested. In similar cases, the Assistant Superintendent of the Atchison & Nebraska Division will rank the Assistant Superintendent Burlington & Missouri and Nebraska Railway divisions.

Superintendent of Telegraph will have charge of telegraph lines and telegraph business of the company, on all lines, and will make headquarters at Lincoln for the present.

The Car Accountant's office and records will be at Omaha, and will cover the cars on all divisions.

The Land Department, with headquarters at Lincoln, will have charge of all lands and land matters connected with all lines of this company.

Burlington, Cedar Rapids & Northern.—It is said that this company will very soon begin work on the extension of its Pacific Division from Holland, Ia., northwest through Iowa Falls to Clarkson in Wright County, a distance of 50 miles. This extension will cross the Illinois Central at Iowa Falls.

Chicago & Pacific.—Receiver Whitman has submttted the fol lowing final report:

Balance, Dec 1		$10,604.40
Receipts for December, January and February		53,548.69
Receipts for March, April and May		36,069.13
Total		$100,222.22
Disbursements in December, January and February	$46,734.40	
Disbursements for March, April and May	30,054.41	
		76,788.81
Balance on hand		$23,433.41

The report was referred to the Master for final audit and settlement.

Chicago, Burlington & Quincy.—The branch line which this company is building from Albia, Ia., to Moulton, is now complete and open for business from Albia southward to Moravia, 12 miles. This branch is on a line proposd several years ago to give the Central Iowa direct connection with the St. Louis, Kansas City & Northern. It is very probably built by this company now, in order to prevent any one else from building it.

Chicago, Milwaukee & St. Paul.—Work is being pushed very actively on the extension of the Southern Minnesota Division from Flandreau, Dak., to the James River. It is said that the company intends to make this line its main line to the Black Hills, but it is not stated whether the Iowa & Dakota Division will be carried to a connection with it or not. At the James River the end of the line will be about 110 miles from the Black Hills.

The company has let a contract to Wells, Harrison & Shute, of Milwaukee, to build a branch from Beloit Wis., to Janesville, a distance of 14 miles.

Columbus, Chicago & Indiana Central.—Notice is given that the Trustees and Receivers will pay, on behalf of this company, on presentation at the St. Nicholas National Bank, New York city, coupons on the following named mortgage bonds, secured on portions of said company's railroad line, viz.: On Cincinnati & Chicago Air Line Railroad Company's first mortgage bonds, due Feb. 1, 1877, to Feb. 1, 1880, inclusive; on Chicago & Great Eastern Railway Company's old first mortgage bonds, due April 1, 1877, to April 1, 1880, inclusive; on Chicago & Great Eastern Railway Company's last first mortgage bonds, due April 1, 1877, to April 1, 1880, inclusive; on Cincinnati & Chicago Air Line Railroad Company's first mortgage sinking fund bonds, due May 1, 1877, to May 1, 1880, inclusive.

Concord & Claremont.—It is proposed to build a branch leaving this road at Mast Yard, N. H., and running north by west to East Andover on the Northern road, a distance of 19 miles. This would make a second or loop line from Concord to East Andover, about the same length as the Northern road, but, it is said, with better grades.

Coosa & Tennessee Rivers.—This company some years ago graded several miles of road in North Alabama, and afterward sold about five miles of the road-bed, from Attalla, on the Alabama Great Southern, to Gadsden, to the East Alabama & Cincinnati Company, which laid track on this short section. It has since been worked as a branch of the Alabama Great Southern. Recently the East Alabama & Cincinnati road was sold under foreclosure, and the purchasers took possession of the main part of the line, from Opelika to Buffalo, but before they could take this detached section from Attalla to Gadsden it was seized by the attorney of the Coosa & Tennessee Company, on the ground that the conditions of sale had never been complied with. Trains continue to run.

Danville, Olney & Ohio River.—Track on this road is now laid to Casey, Ill., on the Vandalia Line, 10 miles south of the late terminus at Westfield. The road is now 18 miles long, from Kansas, on the Indianapolis & St. Louis, to Casey.

Detroit, Mackinac & Marquette.—Grading from Marquette, Mich., eastward is now well advanced, and track-laying is in progress from Marquette to the Chocolay River. A number of cars have been received, and a locomotive for a construction train is on the way to Marquette.

Denver, South Park & Pacific.—A report that a consolidation of this road with the Denver & Rio Grande had been agreed upon, is contradicted by dispatches from Denver.

Dover & Rockaway.—A considerable force is now at work on the grading of this road, chiefly in a heavy cut near Port Oram, N. J. The contract calls for the completion of the work by October next.

Flint & Pere Marquette.—In the United States Circuit Court in Detroit, June 12, a decree and order of sale of this road were entered. Henry M. Campbell was appointed special master commissioner to make the sale, which is ordered to take place at the front door of the general offices of the company at East Saginaw. The date of the sale is not yet fixed, but it is to be at any time after June 26 on six weeks' notice. All the property and franchise of the company are to be disposed of at this sale except the land grant and claims for unpaid sums upon lands sold, these being specially pledged as security for certain bonds. The consolidated bonds, on account of which this sale is ordered, amount to $4,470,000, upon which there are unpaid coupons due to date to the amount of $1,540,280; interest on same, $226,088; aggregate indebtedness, $6,236,368. The road is ordered to be sold to the highest bidder, and the purchaser is required to pay $50,000 cash down, and such other sums as the Court may from time to time direct.

Grand Rapids & Indiana.—This company at its recent meeting voted to increase its capital stock from $2,800,000 to $5,000,000, for the purpose of extending its road to the straits of Mackinaw. The present northern terminus is at Petoskey, on Little Traverse Bay.

Grand Southern.—The St. John (N. B.) *Telegraph* of June 9, says: "Advices from Fredericton state that the government having had the opinion of eminent counsel submitted to them as to the legal obligations of the province to the Grand Southern, and having had a report on the subject from their own law officers also submitted, have concluded that they are liable to pay the subsidy and that the company have ample time to complete the contract under existing provincial acts. The government have, however, it is understood, agreed with the company that the time to be taken shall not exceed one year. This being mutually arranged, the government will pay the subsidy in the usual way; there will be no need to ask either branch of the Legislature to renew the charter.

"It is hardly necessary to add that the work over the railroad will be prosecuted with increased vigor, and will be pushed on to an early conclusion."

Grand Trunk Junction.—This company has filed articles of incorporation to build a railroad from the point of junction of the Belt Railroad with the Chicago, Rock Island & Pacific Railroad, in the town of Calumet, in Cook County, to various points in and about Chicago. The capital of the company is $500,000, and the corporators are William F. Whitehouse, Frederick A. Howe and Charles W. Dean, of Chicago; E. W. Middaugh, of Detroit, and C. B. Peck, of Port Huron, Mich. The object is to connect the Grand Trunk with other lines entering Chicago.

Jackson & Nashville.—It is reported that negotiations have been concluded for the building of this road from Jackson, Tenn., to Nashville by the aid of the Chicago, St. Louis & New Orleans Company. A further agreement for the extension of the road from Nashville to the Cincinnati Southern is said to be under consideration.

Louisville & Nashville.—It is said that this company will soon begin work on a branch from Madisonville, Ky., on the Evansville, Henderson & Nashville Division northwest to the Ohio River at a point opposite Shawneetown, Ill. The distance is about 45 miles through a good country, now without a railroad. In connection with the Shawneetown Branch of the St. Louis & Southeastern it will make a line from Nashville to St. Louis 295 miles long, or 21 miles less than by Hendersonville and Evansville, and with a shorter river transfer. The branch was projected by the St. Louis & Southeastern, but that company went into bankruptcy before it could be built.

Montpelier & Wells River.—It is now stated that this company has agreed to confine itself to local business entirely, and to seek no through traffic. In consideration of this it is to be paid a subsidy by the other parties to the agreement, who are the Boston, Concord & Montreal, the Passumpsic and the St. Johnsbury & Lake Champlain.

New York & New England.—Bids will be received until June 22 at the office of L. B. Bidwell, Chief Engineer, No. 244 Federal street, Boston, for the erection of station buildings at Plainville, Waterbury, Union City, Towantic, Southford, Pomeraug, Sandy Hook, Newtown, Hawleyville, Danbury, Mill Plain and Brewsters. Nearly all of these are on the new extension from Waterbury to Brewsters. Further information can be had on application at the office as above.

New York Central & Hudson River.—The new cross-town line in Buffalo is completed and will soon be opened for business. It is about a mile long, passing through some of the city streets and connects the different lines of the company which enter Buffalo from opposite directions. It enables the company to take its through passenger trains directly through the city, instead of carrying them around by East Buffalo. In connection with the line, a new passenger depot has been built in a central and convenient location.

New York, Connecticut & Eastern.—The Bridgeport, (Conn.) *Standard* says of this projected road: "Commencing at Harlem River where the new road will connect with the Second Avenue Elevated road, the Parallel road will run to the Bronx River crossing near Bronxville. From there it will run to Byram River, 14 miles distant, in the town of Portchester. It then crosses the Connecticut line, and will run by as direct a route as possible to New Haven, a distance of 46 miles, the whole distance to the Harlem River being about 64 miles. It will be known from the Harlem River as the New York, Connecticut & Eastern Railway Company, and that part of the road lying in New York state will be under a separate organization although they will in due time become one in fact as they are in name. The work was commenced Feb. 4, and since that time the line has been located, and the surveys made and the maps are now being completed. These are now being waited for and the estimates which will follow, will be ready at the latest by the middle of July. The Connecticut Railroad Commissioners must then approve the maps and the company will be ready to commence work. By Jan. 1 it is expected the Connecticut part of the road will be graded and all will be ready for the building of the bridge over the Housatonic River. The line in this state will cross the land of perhaps three hundred different parties, and satisfactory arrangements have been made with all but about half a dozen of these, and no doubt is felt of the ability of the company to secure the right of way clear to Byram River before the work of building is commenced. * * No trouble is anticipated in getting from New Haven to Boston, and the route will probably be by the Air Line road to Willimantic, and then over the New York & New England road to Boston. The managers think they will have no difficulty in making arrangements with the Air Line."

The writer probably forgets that under the existing contract with the New York, New Haven & Hartford, the Air Line can take no through business. One other statement (which is given on authority of a party interested in the new company) seems a little doubtful. The present line from New York to New Haven is very direct, and it does not seem possible that any line could be found 10 miles shorter, especially one which makes a considerable detour to the northward.

So many "parallel road" schemes have been started merely for the purpose of selling out to the New York, New Haven & Hartford, that this one is still, justly or unjustly, regarded with a little suspicion.

Niagara Grand Island Bridge Co.—This company has lately been organized under a charter obtained in the Canada Southern interest in 1874. The object of the company is to build a bridge over the Niagara River near the present Suspension Bridge. The directors are all connected with the New York Central or the Canada Southern.

Nevada & Oregon.—This company has been organized to build a railroad from Aurora, Esmeralda County, Nev., north by west to Reno, about 100 miles, and thence north 180 miles to the north line of the state, to connect with a road to be built thence to Portland, Oregon.

Philadelphia, Wilmington & Baltimore.—It is said that this company will soon build a branch from Elkton, Md., up Elk River to the Providence Paper Mill, a distance of about seven miles. The branch would pass by two other large paper mills.

Pittsburgh & West Virginia.—This company has filed articles of incorporation in West Virginia. The road is to run from the line of the state of Pennsylvania and West Virginia, in the county of Monongalia, in West Virginia, and in the counties of Preston, Marion, Taylor, Barbour, Randolph, Pocahontas, Greenbrier, Summers, Mercer and Monroe, to reach the line of the state of Virginia. The principal business office is to be in Grafton, and the company is allowed to do all business connected with railroads. The capital stock is $5,000,000. The incorporators are George W. Brown, A. Thayer, Chas F. Hanshaw and George Brinkman, of Grafton, and J. Marshall Hagans, R. L. Berkshire and John J. Brown, of Morgantown.

The line appears to be intended as an extension of the Pittsburgh Southern road.

St. Johnsbury & Lake Champlain.—At the special meeting of this company (organized to succeed the Portland & Ogdensburg, Vermont Division) to be held at St. Johnsbury, Vt., June 30, the stockholders will be called upon to act on the following business:

1. To see if the company will ratify the act of the directors in issuing preferred stock in accordance with the bondholders' agreement, dated June 1, 1878, as modified by agreement dated Dec. 30, 1879.
2. To see if the company will ratify the act of the directors in issuing scrip for fractions of stock in order to comply with the aforesaid agreements.
3. To see if the company will issue its bonds for $200,000, on 30 years' time, payable in gold coin, at 6 per cent. interest, payable semi-annually in like gold coin, and secure the same by a first mortgage of its railroad and equipment and other property appertaining to the road.
4. To adopt by-laws for the government of the corporation and a seal.
5. To transact any other business thought proper when met.

St. Louis & San Francisco.—Organizations have been formed in Missouri and Arkansas to build a branch of this road from a point four miles east of Peirce City, Mo., through Barre County in that state and Benton and Washington counties in Arkansas to Fayetteville. The Missouri corporation is the St. Louis, Arkansas & Texas, and the Arkansas company the Missouri, Arkansas & Texas, and the intention is to consolidate the two with the main line.

Savannah & Charleston.—The Augusta (Ga.) *News* says of the intentions of the purchasers of this road: "The new combination propose to thoroughly overhaul the road, which is in a very dilapidated condition, has no depot buildings of its own at neither terminus, Charleston or Savannah; no workshops, an inferior road-bed, iron rails, and a very small rolling-stock. It is the intention to procure 3,000 tons of steel rails, thoroughly reconstruct the road-bed, establish depot buildings to be owned by the company in Savannah and Charleston, and in every way make it a first-class trunk line. Through coaches from New York and no change from there to Jacksonville, Fla., it is confidently expected will attract the travel to this route, after it once has been made perfectly safe and its rate of speed the equal of any northern line. It is also thought the road will do a heavy business in shipments of early vegetables and fruits from Florida for the northern markets."

State University.—This road is now graded for five miles, or about one-half the distance between University station on the North Carolina road and the North Carolina University at Chapel Hill. The road will, it is expected, be opened before fall.

Troy & Greenfield.—The Boston *Traveler* of June 15 says: "A controversy which promises to be of a very serious character has arisen between the state managers of the Troy & Greenfield, the Troy & Boston and the Boston, Hoosac Tunnel & Western railroad companies, all because of an alleged deficiency in the returns of Station Agent E. A. Welch, of Williamstown.

"The amount short being $350 in his accounts with the Troy & Boston road and $99 with the Boston, Hoosac Tunnel & Western, these roads have made a demand upon the state for indemnity. They claim that Welch was a station agent not their own; that they pay toll for the service of agents as well as for the use of tracks and stations, so that the state is responsible for the loss. On the other hand, the managers of the Troy & Greenfield road claim that station agents do all local business for the operation of the roads, being the only agent they have, and that the Troy & Greenfield is not a common carrier. They are anxious to make this a test case, and a hearing in the matter will be held before the Governor and Council to-morrow. Welch has been discharged, though claiming that others are responsible for the deficiency."

West Jersey.—A branch line is now under construction which leaves this road a mile south of Cape May Court House and runs eastward five miles to a new summer resort at Anglesea, formerly known as Five-mile Beach. It is now all graded and work is in progress on the draw-bridge over Grassy Sound.

Western Fast Trains.—A Chicago despatch of June 16, says that the western roads, after much discussion, have finally consented to change their time so that their trains will reach Chicago in time to connect with the fast trains eastward on the trunk lines. This settles a somewhat heated controversy, which has been going on for a week or more.

Western Maryland.—At a meeting of the Board in Baltimore, June 12, it was decided to extend the Baltimore & Cumberland Valley road from Waynesboro, Pa., to Chambersburg and Shippensburg, provided the people on the line will give the right of way. It was also resolved to agree to have the road finished in twelve months from the time the right of way is secured.

Willowville.—This company has been organized to build a short branch line from the North Wisconsin road in the town of Clear Lake, Wis., to the village of Willowville.